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PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*Account of a very remarkable Case of Double Monster; with some Observations on the subject of Double Monstrosity.* By WILLIAM F. MONTGOMERY, A. M., M. D., M. R. I. A., President of the King and Queen's College of Physicians in Ireland, and Professor of Midwifery in the School of Physic[a].

THE subject of double monstrosity, fully treated, is one of such "ample scope and verge," that even a rapid glance at the numerous details involved in it would be an enterprise not to be circumscribed within such limits as the present occasion legitimately affords, and would not, moreover, answer the object I had in view when I proposed to myself to describe a very remarkable specimen, which, through the kindness of a friend, was recently presented to me for examination and preservation in my museum.

Subsequently, it occurred to me that I might, perhaps, invest my theme with somewhat more of interest and practical value, by giving a short account of some other cases of a somewhat similar kind, which have, from time to time, been met with in this country, and alluding still more briefly, for the sake of comparison, to one or two occurring elsewhere.

[a] Read before the Association of the College of Physicians.

With such intention, then, I propose to notice very shortly, first, the circumstances attending the birth of these monstrous productions, as a knowledge of them may, one day or other, tend to assist some of us in practice, should such anomalous cases present themselves for our management.

Secondly. To dwell for a moment on the physiological history of some of them, which afforded opportunity for observation; and—

Thirdly. To inquire into their anatomical structure where known, so far, at least, as regards certain remarkable peculiarities which some of them have presented.

In that age of refinement when Cicero captivated the crowded forum by his eloquence, and by his writings sought to instil a more enlightened philosophy through all mankind, each monstrosity was regarded as the special harbinger of some approaching calamity, and hence their name, derived from the verb *monstrare.*

Lycosthenes went so far as to add to the description of each monster the picture of the misfortune which was to be its sequel.

Even so lately as the sixteenth century, and probably later, some writers of authority did not scruple to attribute their production to a supernatural influence. Rueff, in 1580, formally discussed the question—"An homines ex dæmonibus, et rursus dæmones ex hominibus infantes concipere possunt." He, however, as well as Casparus Schottus, declared in favour of the negative.

Various other theories of their etiology were proposed by other writers, upon which I do not propose to enter; suffice it to say, that while some of them were simply ridiculous, others were disgusting, and all unsatisfactory.

A late excellent writer on this subject, Vrolik, says that the opinions concerning the origin of monstrous births may be reduced to two—namely, that which attributes them to the original malformation of the germ, and that which ascribes them to the subsequent deformation of the embryo, by causes operating on its development. Now, really as regards any explanation of so mysterious a subject, this seems to amount to little more than saying that the general opinion at present is, that monsters are born monsters either because they were originally so formed, or became so afterwards; but it is only candour to admit, that although modern investigations have disclosed to us many facts, from which we have been enabled to establish such a constant connexion between certain abnormal or morbid conditions of the envelopes and appendages of

the ovum, and monstrous deformities in the fœtus, we feel justified in regarding the latter as effects resulting from the former; still it must be confessed, that of the original causes of these conditions, or of the mode in which they lead to such consequences, we know but very little; and that this question, like many others concerning reproduction, is one of those which as yet we only "see through a glass darkly;" and on this particular subject it has been happily but too truly observed by Geoffrey St. Hilaire, that "the sources of investigation diminish as the difficulties increase"[a]. It would, then, I think, be a task as unprofitable as it would be unnecessary to my professed object in this communication, to enter at any further length into an examination or review of the endless speculations which have been promulgated on this part of the subject.

Neither is it my intention to offer anything like an enumeration of the different classes into which the ingenuity of authors has divided and subdivided these monstrosities, but to pass at once to the subject of "double monstrosities," and allude to certain groups of them which I have met with, and possess specimens in my museum; or which, for other reasons, have more particularly interested me.

First. Under the head of double monsters, or monsters by cohesion, should be ranked those in which one fœtus has been included within another, which latter may continue to live some years.

Of this form was the remarkable case of the boy at Sherbourne, in Dorsetshire, who lived to the age of sixteen years with a fœtus in his abdomen, which was contained in a pouch connected with the mesentery and colon. The fœtus and appendages were exhibited in London in 1814, and afterwards placed in the Museum of the Royal College of Surgeons, where the writer saw them, and where they still remain; and a full account of the case, illustrated by engravings, was published by Mr. Highmore, in 1815.

In Mr. Young's case[b] the boy lived nine months; and the boy, Amedée Bissieu, whose case is reported by M. Dupuytren, in the Memoires de la Faculte de Médecine de Paris, lived thirteen years with a fœtus in the abdomen[c].

Secondly. Those which have been named Heteradelphi, or double monsters, in which one of the fœtuses is more or less perfect, and the other, or part of another, merely an appendix to it.

[a] Anat. Philos. p. 156. [b] Medico-Chirurgical Transactions, vol. i.

[c] For a full account of this case see vol. iv. p. 294, of the First Series of this Journal.

Beings thus formed have rarely lived many years; perhaps the most remarkable is the Chinese A-Ke, whose figure is well known. The life of such a parasite is in general only vegetative, and the parasite does not in general appear to possess the power of voluntary motion, or distinct sensation: in the case of A-Ke only, had the man who bore the parasite any voluntary power over its limbs[a].

For a remarkable instance of this class we are indebted to Dr. Bardsley, of Manchester; it is of the same kind as the Chinese A-Ke, one child being perfect, and the other a mere appendix. Dr. Bardsley, in his Retrospective Address to the Provincial Medical and Surgical Association, in 1837, thus alludes to it: "The wife of a labouring man, at Staleybridge, near Manchester, gave birth to a monstrosity, apparently the result of an abortive effort of nature to effect the formation of twins. This *lusus naturæ*, having only one head, is possessed of four arms and four legs; the sex is masculine, and the organs of generation are double." When Dr. Bardsley spoke as above, the child was living, was two months old, and "in the seeming enjoyment of excellent health;" and in a letter which I had the pleasure of receiving from him a few days since, he informs me "that it lived for rather more than a year," and that "its birth was easy," but the parents having left the neigbourhood of Staleybridge, he was unable to ascertain any further particulars of its history.

The appendix may consist of a head only, which may be variously attached. In the preparation, No. 194, in my museum, there is a second head attached by union of the two faces, the mouth being in the angle of junction, and an eye at each side. The child is preserved in the uterus, the mother having died before labour came on.

In the case of Lazarus Colloredo, described by Bartholinus, the appendix had a body with a head, and four extremities: he lived for some time, and although the appendix took no food, nor discharged fæces, its organic and animal life seemed tolerably perfect; it slept, moved the different parts of its body, and had cutaneous exhalations.

Thirdly. Double monsters by anterior duplicity, "whose distinctive characters are, that two bodies in a state of nearly equal development are placed exactly opposite to one another, with their sterna connected together, and with their abdominal cavities either partially or completely coalesced"[b], as in my present case, which may be considered as only a superior form of the most complete Heteradelphi; and in Cruveilhier's, which I shall notice hereafter.

[a] Vrolik. [b] Vrolik.

"Double monsters," says Vrolik, "form, collectively, one class of organic beings, which, however different in their several degrees of malformation, may be arranged in one continued series. As the lowest degree of duplicity, may be mentioned that of a single part of the body; for example, a double or supernumerary finger: as the highest, a complete double monster, with two heads, four upper and four lower limbs, and two trunks, such as the *Siamese twins.* And between these two extremes, there are different forms of duplicity, which gradually run one into the other."

And I think it right to add, in the words of the same writer, that "there is no positive or constant relation between the external and the internal organs as to their degrees or modes of duplicity."

Fourthly. Double monsters by inferior duplicity.

These are united at the pelvis, and have two bodies, four separate superior extremities, four separate inferior extremities, —the Ischiadelphi of Dubreuil. Of these, I shall notice two remarkable instances: one of which occurred at Boyle, in the county of Roscommon, and the other at Thomastown, in the county of Kilkenny.

Fifthly. Lateral duplicity, in which the two bodies are not, as in anterior duplicity, set opposite to each other, but are turned sideways from one another, and have a common thoracic cavity. Of this class there are several subdivisions, into which I will not enter, but merely say that, as illustrations, we may take Dr. White's case, which occurred at Carlow, and Ritta-Cristina.

Sixthly. Posterior duplicity, in which two bodies are united by their backs or some part of them, as at the pelvis, at the back of the vertebral column, or back part of heads, or by the nates, as in the celebrated case of the Hungarian sisters, Helen and Judith.

Seventhly. Superior duplicity, in which the two children are united by their heads, the bones of which form a single skull, the *sycephali* of some authors. These are very rare. A case of this kind occurred some years ago at Malta, of which I have a cast (No. 44) in my museum.

Having premised these few general observations, I shall proceed, with the already stated objects in view, to describe some singular cases which have from time to time occurred in this country, as well as to notice one or two of peculiar interest, from other sources, before giving an account of the remarkable double monster which lately came under my observation.

Thomastown Case.—Complete Double Child.

Case No. I. Sunday, January 3rd, 1808. Dr. Alcock of Kilkenny was called to visit Mary Cahill, about thirty years of age, in labour of her third child since Friday; she had in each of her former labours one perfect child. He found a child's head born, and had been so from the evening before, but no further progress was making, though the labour had been severe all night: the protruded head was much swollen and quite black; the pulse was much sunk, and the woman greatly exhausted, two robust midwives having freely used their united exertions to pull away the child.

Dr. Alcock brought down the arms without much difficulty; but found the rest of the body quite immovable, and soon discovered a third arm apparently growing from the same body; this disclosed the nature of the case, and convinced Dr. Alcock that the only chance of delivery was to remove as much of the presenting part as could be got at, return the remainder, and bring down the feet of the second child.

As the woman was much exhausted, Dr. Alcock sought the assistance of Dr. Pack, and, having drawn down the protruded part of the child as much as possible, Dr. Pack divided the body between the diaphragm and stomach, which was, as afterwards appeared, exactly where the union with the second child commenced. The second child was then turned, and the entire brought away. The placenta soon followed, and all seemed as well as could be expected; but the woman was seized with a vomiting in the course of the night, and died before morning. No examination of the children could be obtained: the bodies were placed at right angles to each other, and they had a common abdomen; there was but one umbilical cord, which sprang from the centre of the abdomen: the placenta was such as is usual with a single child[a]. (See Plate I. Fig. 1.)

This monstrosity, as also the next to be noticed, belongs to the class named by Dubreuil Ischiadelphi, as far as the union of the pelvis is concerned, but differs from the general law[b] that the attached limbs partake of the peculiarity of the part to which they are attached, the lower extremity being quite separate and well formed.

[a] Dublin Medical and Physical Essays, vol. ii. p. 33.
[b] Cruveilhier, Anatomie Pathologique, liv. xxv. p. 2.

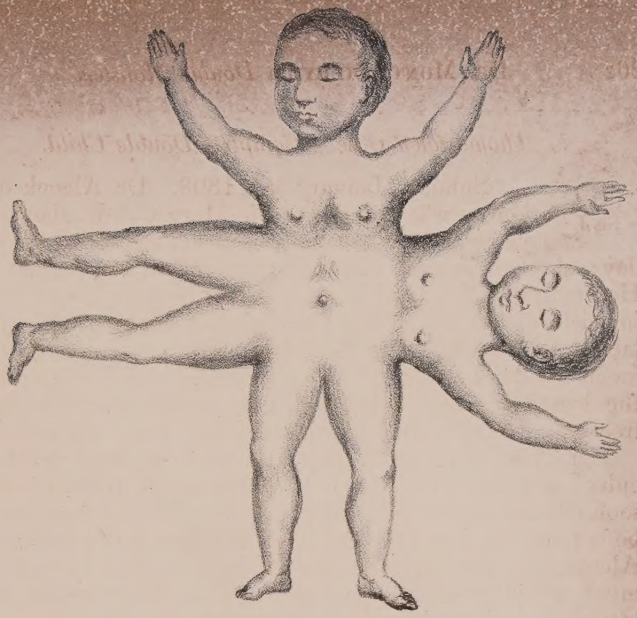

Fig. 2.

Double Child born at Boyle.

Case No. II. It consisted of two bodies in a direct line, united at the pelvis. The mother, Catherine Corcoran, resident at Boyle, County Roscommon, was a very healthy woman, thirty years of age, and, previously to giving birth to this monster, had borne five well-formed children, no two of which were twins. In this instance her labour was not attended with any unusual difficulty. This monster was born on the 24th of July, 1827, at 2 o'clock, A. M., and lived until the 26th, at 2 o'clock, P. M. It appeared to have nearly reached the full period of nine months. It had a head at either extremity; two chests, with arms complete; two abdominal and two pelvic cavities, united end to end, with four legs placed two at either side, where the union between the pelves occurred. (See Plate I. Fig. 2.) There was only one anus, situate between the thighs of one side; and on the same side the urinary bladder opened above the pubis; there was only one placenta, and one umbilical cord, which entered at the unnatural opening from which the urine was discharged.

The infants were baptized as two: one, having dark hair, was named Mary; the other, fair-haired, was called Catherine: and each in its feelings and actions appeared independent of the other; sometimes both cried together, at other times one cried while the other remained tranquil, but generally they were both disposed to be quiet, unless when excited by exposure to cold air in gratifying the curiosity of neighbours: and it would appear that the gratification of this curiosity was the principal cause of their untimely death. They each in succession sucked from the breast, and each, in like manner, frequently took milk from a spoon; they both vomited very often, and the act of vomiting in one was not always attended with similar disturbance in the other; their fæces were discharged from a common opening, and the urine of both flowed from the same imperfect bladder. They both used their limbs very vigorously, and the feet of one were extended along the sides into the arm-pits of the other. Life departed from Mary about ten minutes before the death of Catherine.

Skeleton.—The heads, upper extremities, and chests of both fœtuses were perfect and equal in size; all the bones constituting two pelves were well developed, but joined together in a curious manner: the coccyges overlapped each other laterally, and, in the recent state, the spinal marrow was continued from the extremity of one sacrum into that of the other, making an

inseparable union at this point. The pubic bones were united by symphyses, but not in the usual way: the left pubis of one fœtus was joined to the right pubis of the other on one side, and *vice versâ* on the opposite side; the thigh bones, which were articulated, two on each side, to these pelves, belonged of course to their respective fœtuses. The arrangement of the skeleton was such, that if the coccyges were separated, and the pubes disunited at their unnatural symphyses, a perfect pelvis and two perfect lower limbs might, by a new arrangement, be formed for each infant[a].

I may observe that this case is taken by Professor Vrolik as the type of a class, Inferior Duplicity, and the figure of it in my article, "Fœtus," in the Cyclopædia of Anatomy and Physiology, vol. ii. fig. 146, is referred to by him as an illustration.

Double-Headed Fœtus.—Carlow Case.

Case No. III. March 3rd, 1839. Dr. White was called to a woman in labour of her eighth child, and found the lower extremities and nates of a female child already protruded. In trying to bring down the arms, he was surprised to feel two mouths and noses, and a division in the neck, into which his finger readily passed.

It was found impracticable to effect the delivery of the heads by manipulation; and as symptoms became pressing, Dr. White introduced the perforator through the palate, and having reduced the size of the head, he fixed a hook in the foramen magnum, and, with the assistance of Dr. Porter, extracted the double-headed child. There supervened so much hemorrhage, that manual removal of the placenta became necessary; after which, the uterus contracted favourably.

The child appeared to be of the full time, and rather larger than usual. About the fourth or fifth cervical vertebra the neck was divided into two, each supporting a well-formed head; these were considerably flattened where they touched, and the ears there placed were rather larger than those outside. The eyes of each head were of the natural size, and perfectly formed, as were most of the other parts about the head; the chest and abdomen were larger than usual, and on the back the spinous processes of two vertebral columns could be distinctly traced, gradually approximating towards the sacrum; and there was a sharp spine of bone almost bursting through the skin, growing from the right side of the sacrum. (See Plate II. Fig. 1.)

[a] See Catalogue of the Museum of the Royal College of Surgeons of Ireland, vol. i. p. 148.

Fig. 2.

The placenta had a large lobe attached to it. The measurements of the monster were as follows:—Length of child, 18½ inches; breadth across the shoulders, 7; breadth across the heads, 8; length of arm, 8; girth of lower part of chest, 14.

The child was buried unexamined, but was exhumed twelve days afterwards, and examined, but not satisfactorily. The following particulars were, however, ascertained. There was but a single pair of lungs, of the usual size, and placed rather posteriorly, the heart encroaching much on their position. The latter organ was very large; its *auricles* appeared natural, but there were *three ventricles*, one in the centre, and behind the other two; from this arose the pulmonary artery, and from each of the two anterior ventricles arose an artery. That from the right subdivided into three, which were distributed to the right head and arm,—that from the left gave off three branches for the left head and arm: its continued trunk appeared to be the aorta, and to supply the remainder of the body. "In short," says Dr. White, "it seemed as if to a normal heart, intended to supply the left head and body, an additional ventricle was superadded for the right head and arm[a]. The two anterior ventricles appeared to communicate through their septum." Behind the heart, contained within a serous sac, was a fleshy mass, in shape something like the spleen, but of the colour of the heart; in texture, it was like hepatized lung; it had no cavity in it. An œsophagus was traced from each pharynx; the left one was in its usual place, and the right one more anterior, and to the right of the bodies of the vertebræ belonging to the right head and body; each œsophagus terminated in a distinct stomach. The left stomach was in its usual position, the right one reversed, its large extremity being towards the right. The two stomachs united at the pylorus and opened into a common duodenum, and from thence downwards the intestinal canal was single. The liver was enormously large, as was also the colon: the bladder and uterus single; the bodies of two separate spinal columns could be felt through the chest and abdomen to the sacrum, with a space between them, into which a large quill could be laid[b].

It seems highly probable that in this case, had the heads presented, delivery might have been accomplished by the natural efforts, though with much difficulty: one head might have been pushed down after the other, as did actually happen

[a] If the communication existed between the ventricles it would virtually reduce the number of ventricles from three to two, and otherwise alter the action, &c., supposed by Dr. White.

[b] Dublin Medical Press, 1839, vol. i. p. 212.

in the case sent to me by Dr. Brabazon, in which the labour was accomplished with very little obstruction,—labour being almost the only act, which, to use a common phrase, is best done "*head foremost.*"

Suppose this child to have been born alive, why might it not have lived as well as the well-known monster, *Ritta-Cristina,* which survived more than eight months; or the still more remarkable two-headed man mentioned by Buchanan, who lived to be twenty-eight years old, in the reign of James III. of Scotland?

Case of Double Monster born at Belturbet.

Case No. IV. March 6th, 1851. Mr. O'Donovan was called to Mrs. L., aged 35, mother of three children, and seven months pregnant of her fourth, in very delicate health; her abdomen enormously enlarged, having the appearance of a twin pregnancy in the ninth month; lower extremities œdematous; and she was exceedingly weak and dispirited; former pregnancies favourable.

11 o'clock, P.M., labour set in rapidly. Mr. O'Donovan found the membranes ruptured and the room deluged with the waters; the feet and legs of a child were protruded, cold, and livid; at the orifice of the vagina appeared what at first seemed a hand, but being pushed down it was found to be a third leg, then a fourth leg was discovered and brought down.

By passing the finger round the fœtus, Mr. O'Donovan found that the body was single at the umbilicus, the cord lying in the cleft, and a portion of intestine protruding. He assisted the pains, which were few and weak, gradually drew down the body, and, having hooked down the arms, delivered the woman of a full-grown monster fœtus, with two heads and two sets of extremities; the placenta soon descended and was removed; the heads passed one after the other, moving, as it were, on a central point, the junction at the neck. There was imperfect contraction of the womb, and a tendency to hemorrhage, which, however, Mr. O'Donovan was enabled to prevent by the usual means, and the mother ultimately did well.

"No description," says Mr. O'Donovan, "can convey an idea of the horrible appearance of this monster: the heads taken together were much larger than the head of a full-grown healthy child, and were fully developed; the faces fronting and applied to each other, the mouth of the one being received into that of the other, which was a large chasm, the line of junction commencing at the lower lip and continuing perfect to the umbilicus; the thorax of each was well formed and distinct

except for the juncture; at the dorsal vertebræ, and opposite the umbilicus, the bodies were drawn towards each other as if compressed by a cord. (See Plate II. Figure 2.) The gross bulk of the double monster was equal to that of a single child of nine months; each head was as fully ossified as a natural fœtus of the same age, that is, seven months. The abdominal parietes were deficient at the junction of the funis, where there existed only a thin diaphanous membrane, as if an expansion of the sheath of the cord itself; the arms of the children embraced each other in the form of a figure of 8. The placenta was about the natural size, part apparently healthy, but nearly a third *presented a vast collection of hydatids.* No examination would be permitted"[a].

Mr. O'Donovan has lately informed me that the lady was again confined last month (February), under his care, of a healthy, full-grown, female child, and had a most favourable labour.

I may observe, in reference to this case, how often anomalous or morbid states of the cord or placenta are, as indeed we might anticipate, found in connexion with malformations or monstrosities of the fœtus; hydatid degeneration of the placenta is often met with, not only accompanied by extreme atrophy of the fœtus, but frequently no trace of it is left remaining.

One of the ugliest and most disgusting looking monsters I ever saw was connected with an enormous placenta, whose substance was quite unravelled, and the separate branches of capillaries hung down like minute stalactites, at least two inches long, while the twin brother of this monster was a comely child, attached to a healthy placenta and cord.

Such a relation between morbid anomalies of the placenta and malformations or monstrosities in the fœtus must cease to surprise us when we consider that the placenta is, in fact, the organ or apparatus by which the whole *pabulum vitæ* is supplied for the development and support of the child during its intra-uterine life, and if this supply is tainted at its source, or interrupted by morbid changes therein, we can readily understand to what a degree the evolution of the embryo is likely to be thereby affected.

Hence it is, that in those perplexing cases so frequently met with, in which women are, in several successive pregnancies, delivered of dead children, without any discoverable constitutional disease or infirmity in the mother, an examination of

[a] See vol. xii. N. S. of this Journal, p. 482.

the placenta so frequently discloses to us morbid alterations quite sufficient to explain the distressing result. Of these I may just allude to what has been called tubercular disease of the placenta, apoplexy of its substance, hydatid degeneration, inflammation of the placenta or envelopes of the ovum, and especially if producing their adhesion to the surface of the child.

In another instance under my observation, the cord was excessively dropsical, so as to be in some parts two inches in diameter, and in that case the child was unequally developed, one side of the body being very much larger than the other: this inequality, however, gradually disappeared, and the young lady is now of unexceptionable symmetry. "In one of the recorded cases," says Vrolik, "the superior extremities were wanting, and the anus was closed."

Serres considers the absence of one of the umbilical arteries as the efficient cause of that form of monstrosity in which there is *ectopia viscerum abdominalium*, but such a consequence does not always follow such a defect. I have in my museum a specimen of a placenta and umbilical cord with only one artery, and it was connected with a remarkably fine, healthy, and well-formed child[a].

This want of one umbilical artery was also observed in Sir A. Cooper's imperfect and heart-less fœtus, but, with the exception of an umbilical hernia, there was no other ectopia viscerum abdominalium.

I have for many years endeavoured to impress on my pupils the great advantages to be gained not only in the way of general pathological inquiry, but in the acquisition of a particular species of knowledge of the utmost practical value, by carefully examining the fœtus and its envelopes in every case, but especially in those cases of blight or arrested development, where the size of the fœtus is so entirely at variance with the real date of the pregnancy, a mistake on which point may lead, and has so often led to giving an opinion which may irreparably injure a really unblemished reputation.

The following case, which was recently brought under my observation, is a striking illustration of the above remark. Five months after her husband's departure for a foreign country, a lady miscarried of an ovum and fœtus, presenting the characters and development of the third month: for more than two months and a half after the separation of the parties she had no menstruation, and had other indications of pregnancy;

[a] See also Vrolik, Cyclopædia of Anatomy and Physiology, vol. iv. p. 947–8.

but she then had sanguineous discharges from the vagina, which were regarded as a return of her catamenia, and she was no longer considered pregnant. These, however, ceased, and there was again a suppression for two months and a half, at the end of which time, the lady miscarried of an ovum and fœtus, presenting conditions corresponding to such a period; the result of which was a conviction, on the part of some members of her husband's family, that she must have been unfaithful to him, and it was at once decided to inform him of his misfortune. Before doing so, however, the ovum was shown to a medical friend, who, wishing to have his own judgment in so delicate a matter fortified by the opinion of another, submitted the ovum to me for careful examination, when the true nature of the case appeared at once manifest: the envelopes were in a morbid state, thickened and tuberculated, and had evidently been long separated from their vascular connexion with the uterus; the umbilical cord also was diseased at its placental end, where it was expanded into a lotus-shaped sac, filled with a brownish serum. Of the true history of the case there seemed then no doubt: the lady had conceived just at the time of her husband's departure, her pregnancy had proceeded undisturbed until the third month, when she had symptoms of miscarriage, but did not miscarry; but the ovum was blighted, and, having lost its vitality, ceased to grow; it was, however, retained in the uterus until the expiration of five months from the date of conception, when it was expelled in the morbid state already described. This explanation at once set at rest all the unworthy and undeserved suspicions entertained against this innocent lady, who would otherwise have been made the subject of a most painful proceeding. Facts of this kind have been heretofore insisted on by the writer in his work on the Signs of Pregnancy, and some cases related in illustration[a].

Double Fœtus, described by Cruveilhier[b].

Case No. V. M. Jolly was called to the mother when she had been eight hours in her third labour, and found the head of the child born three hours, but the body could not be got down; the face was turned forwards; the cord was round the neck, empty, and without pulsation: child evidently dead.

M. Jolly ascertained with difficulty that there was a double fœtus; he disengaged the arms of the one whose head was al-

[a] Pages 96 and 209.

[b] Livraison xxv. pl. 5, 6.

ready expelled, then, carrying the head upwards and forwards, he brought down the back, the nates, and the feet; and then, seizing the nates of the second infant, he extracted it in less than a minute; neither showed any sign of life, though it appears that the first was alive up to the moment of the expulsion of the head: both were females. The mother did well. The adhesion was anterior from the umbilicus upwards to the top of the sternum; a single cord ended at the common umbilicus, where there existed a hernial protrusion, with its investing membrane ruptured, probably in the act of delivery.

Thoracic and Abdominal Viscera.—Sternum distinct. Each fœtus had its own thymus, and two lungs, but the two hearts were blended into one, which lay horizontally, the right half being contained in the thoracic cavity of the right fœtus, and the left half in the thoracic cavity of the left fœtus; there were four auricles opening into each other, and two ventricles, from each of which arose both an aorta and a pulmonary artery.

Two stomachs for each fœtus respectively, two duodenums, ending in a single jejunum, which afterwards bifurcated and passed into a large intestine belonging to each fœtus, with appendices vermiformes, &c.; two pairs of kidneys and suprarenal capsules, two bladders, two uteri and appendages. The liver was apparently single, but in reality two livers joined, one being anterior and the other posterior, each receiving an umbilical vein, and having a gall-bladder of its own.

The pulmonary arteries had each only two valves.

These two fœtuses had their circulation in a condition like that of fishes, their ventricular circulation being distinct, and their auricular circulation common. In the published account of this case (*op. cit.*) there is an inaccuracy in the description of the cord and its constituent vessels; at page 2 it is said that there were "two cords which were separate throughout their whole length, but re-united on the placenta;" and at page 3 it is stated, that "the cord was single, and terminated at the common umbilicus;" but in a letter with which this distinguished pathologist has very kindly favoured me on the subject, he informs me that the above statement was inaccurate, and should have been, that "the two cords, which were united throughout their whole length, separated on the placenta." He adds, that "the single cord was composed of four umbilical arteries and one umbilical vein, which bifurcated at the one end at the placenta to form the vein of each cord, and at the other end bifurcated in the abdomen to go to each of the united livers."

The placenta was single.

Fig 1

Ruby

Judith

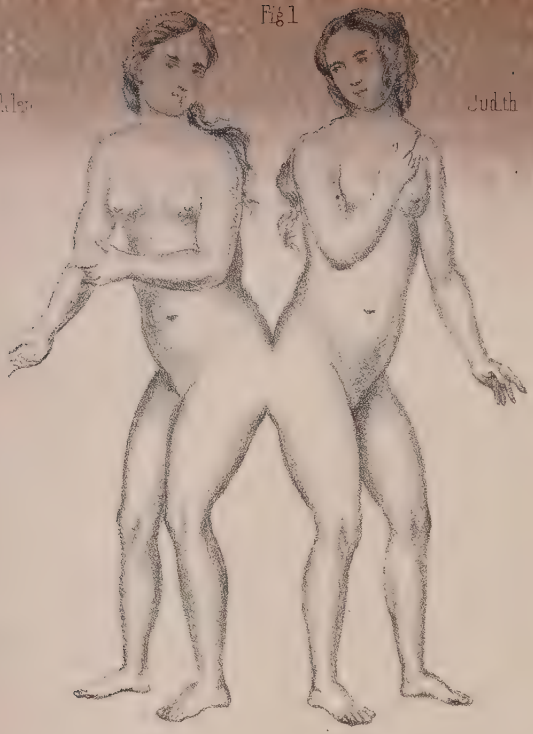

Fig 2

Rima

Chrisuna

The Hungarian Sisters—Helen and Judith[a].

Case No. VI. Double female monster, united by the nates and part of the loins (see Plate III. Fig. 1), which condition was attributed to the force of the mother's imagination while carrying them—"Attentius canes contemplabatur coëuntes, arctius cohærentes, et capitibus erga se invicem quodammodo conversos, eosque sibi crebrius præfigurabat."

They were born at Szony, in Hungary, 26th October, 1701. Helen was born first, as far as the umbilicus, and after three hours her feet passed, and then the body of Judith,—nates first, it is to be presumed.

In their sixth year Judith was attacked with paralysis of the whole left side; and although she recovered, she was ever after weaker, less active, and more dull. Helen was active, more sprightly, and intelligent. Both are described as very handsome.

Menstruation was established in their sixteenth year, and continued regular all their life, but did not occur in both at the same periods.

They had measles and small-pox at the same time, but other illnesses did not occur to both together. When venesection was required for either, it was always performed on Helen, as being the stronger.

They were shown through almost all the countries of Europe for seven years. They exhibited a great disposition to learn, and spoke Hungarian or High Dutch, Low Dutch, and French, and were learning English.

They could not walk side by side, and when one went forward, the other was obliged to go backward; when one stooped to take up anything, she raised her sister quite from the ground, and carried her on her back, which Helen often did, as being stronger, and more lively than the other. They had not their feeling common anywhere but in the place of their conjunction.

There was but one vulva, hidden inferiorly between the four thighs. The vagina was at first single, but soon divided into two distinct canals, and all the other sexual organs were distinctly double. In like manner there were two separate intestinal canals, terminating in a common extremity; and the desire of discharging the fæces was felt by both simultaneously; but not so with the urine, which caused sometimes disputes, though in general they were fond of each other.

[a] Philosophical Transactions, vol. I. p. 311.

The two vertebral columns were united by the second piece of the sacrum, and they terminated in a single coccyx. The two aortæ and venæ cavæ anastomosed inferiorly at the situation of the iliac vessels, and thus established a large and direct communication between the two hearts, producing, of course, a great community of life and functions.

Their mental and nervous systems seemed to have little communication, for one often slept while the other was awake, and one was sometimes occupied in reading or writing, while her sister was in a state of profound repose.

On the 8th of February, 1723, Judith died of disease of the brain and lungs, at the age of twenty-two. Helen took ill with slight fever soon after the commencement of her sister's illness, and suddenly sank into a state of collapse, preserving, however, her mental faculties. After a short struggle she fell a victim to the death of her sister, and both expired almost at the same instant.

Ritta-Cristina[a].

Case No. VII. This remarkable double monster was born at Sassari in Sardinia, 12th March, 1829. (See Plate III. Fig. 2.) The mother was well formed, and had previously borne seven perfect children; in the birth of Ritta-Cristina the labour was not attended with difficulty; the heads presented, and each head was separately baptized and named; they were brought to Paris, and there publicly exhibited, which is said to have hastened their death. It is rather amusing to know that the public authorities interdicted their exhibition except under most stringent restrictions, for fear that it would open a door for psychological speculations and discussions[b].

On examination after death the two vertebral columns were found separate in their whole length, and a rudimentary pelvis, formed of a single bone, separated them inferiorly. Another fully developed pelvis was situated in its natural position, and

[a] Serres, Anatomie Transcendentale.

[b] "L'apparition de Ritta-Cristina à Paris a éveillé l'attention de l'autorité, qui a cru que cette *bicéphalité* pouvait ouvrir la porte à des discussions psychologiques; elle s'est donc empressée d'en interdire l'exposition publique, ou du moins elle a mis dans sa permission de telles restrictions, qu'elle équivaut presque à une défense. Le Vicaire de Sassari a été plus décisif il n'a consulté ni théologiens, ni naturalistes, ni physiologistes; il a vu deux têtes et quatre bras sur un corps féminin; il a donc baptisé deux filles; il a pensé qu'en n' accordant le baptême qu'à une seule, il eût pu manquer à ses devoirs religieux, et avoir à se reprocher un jour la damnation de l'une d'elles. Nous n'entrerons point dans de pareilles discussions, notre but n'ayant été que d'examiner ces monstruosités dans leurs rapports avec les sciences naturelles."—*Revue Médicale*, 1829, vol. iv. p. 240.

supported two well-formed abdominal limbs; the ossa innominata were widely separated posteriorly, so as to include between them the two sacra and the rudimentary pelvis: there were only eleven ribs at each side; the lower limbs were remarkably meagre and ill nourished.

There existed a single bladder, uterus, and rectum, which were common to the two subjects, but behind these organs were found rudimentary traces of others.

There were two distinct hearts in one pericardium, which touched at their apices; all the other thoracic and most of the abdominal viscera were double; examination by the stethoscope indicated only a single heart.

Many interesting observations were made on this monster during life; the nervous systems seemed to have but little communication, except in those parts which were in the line of union, as the anus and sexual organs; for if the right limb was pinched, or the sole of the foot tickled, Ritta only felt it; and if the left, only Cristina; so that of the common pair of limbs, the right seemed to belong to the one individual, and the left to the other. And this was verified on dissection; for the spinal cords were found to be quite separate, and there was no communication between the nerves forming the nervous trunks going to the two abdominal limbs; the only union between the nerves of the two beings was found in the parts in the line of junction. One would sleep while the other remained awake sucking; or smile while the other cried, or was quite tranquil.

The two creatures experienced the sensation of hunger at different times, but felt the desire to expel the fæces at the same time. This might be expected from the structure of their alimentary canal, which was double as far as the commencement of the ilium, and single in the rest of its course. There was an anastomosis of the iliac arteries belonging to each.

There was a remarkable difference in the expression of their countenances: Cristina being of a gay and happy look, while Ritta looked sad and melancholy, as if suffering, which was the fact.

They died at Paris, 23rd November of the same year, having lived eight months and eleven days; and I believe their survival for such a length of time constitutes an exception to the history of double monsters with two hearts in one pericardium. The account of their last moments is deserving of mention. Ritta, who had always been feeble and ailing, at last became very ill for some days before her death, but during

those days, Cristina continued in perfect health, was gay and merry, and was playing in her mother's arms when Ritta breathed her last, but on the moment, Cristina screamed out and instantly expired. It was remarked also that she became cold and rigid in a few minutes; but that Ritta became so only at the end of eight hours.

The same authority which objected to their exhibition while living wished to prevent their examination after death, and ordered their burial within twenty-four hours; and it was only at the urgent solicitation of M. Geoffrey St. Hilaire and others, that permission could be obtained for delay, in order to investigate their organization.

Case No. VIII.

Sir Astley Cooper has left us the history and examination of a monstrous acardiac fœtus[a], and its connexion with its twin brother, to which I wish to refer, as its history embodies the fact of community of circulation; which fact, though under much more singular and remarkable circumstances, constitutes the most curious feature in the structure of the double child, which is the principal object of this communication.

In Sir Astley's case the placenta was composed of a single mass, but it was divided by the membranes into two cavities of unequal magnitude, the larger of which contained a well-formed, and the smaller an imperfect, fœtus. These two cavities were perfectly distinct from each other, although seated on the same placenta. The septum, or separation between the two children, was formed by the combined membranes of each, there being separate membranes, but only one placenta for the two children; for although there was a funis to each fœtus, the one funis freely communicated with the other, by means of a large umbilical artery and vein, so that when the heart of the perfect fœtus acted, the blood was not only forced into the arteries, but also into both portions of the placenta, and was thence returned by the umbilical vein in the ordinary manner.

In the funis of the larger child there were, as usual, two umbilical arteries and one vein, which latter was considerably larger than in proportion to the size of the placenta and membranes which enveloped the larger fœtus.

Near the centre of the cavity which contained the imperfect fœtus, a funis arose from that portion of the placenta, so that there was a funis to each fœtus. This funis of the imper-

[a] Guy's Hospital Reports, vol. i. p. 227.

fect child contained only one umbilical artery and an umbilical vein, which also was of large size.

The imperfect heart-less child was half composed of a large cutaneous pouch, which occupied the space of the head, neck, and part of the thorax; the remaining half consisted of an abdomen, pelvis, and two lower extremities, the feet of which had been separated. The funis entered at the umbilicus, and by its side a hernia appeared, composed, in part, of the small, and, in part, of the large intestines, only partially covered by integuments, and having no peritoneal sac.

But the great peculiarity of the mode of support and circulation of the imperfect fœtus is to be found in the structure of its placenta, and the direct communication which existed between its vessels and those of its perfect twin-brother. A large branch of the umbilical vein of the perfect child passed upon the surface of the placenta, directly to the funis of the imperfect child or monster, and thus a free venous communication was established between the two children, whilst the other branches of the vein ramified upon the surface of each placenta. The umbilical arteries, also, of the perfect fœtus sent forth two large branches, but of unequal size, to the smaller portion of the placenta, as well as many branches to the larger part of it; and the two arteries which passed to the smaller placenta formed only a single umbilical artery in the funis of the imperfect child; so that there was an arterial as well as a venous anastomosis between the two children, and a free communication between them was thus established.

"The difficulty which appears to arise here in explaining how the circulation in the imperfect fœtus could be carried on without the assistance of the heart's action, is at once removed by considering that the imperfect child was a mere appendage to its perfect brother; that there was only one placenta, and the blood which traversed its structure was derived from the perfect fœtus and returned to it again; that the imperfect fœtus received, through its own umbilical artery, from that of the perfect fœtus, the current, which, after entering the aorta, and thence circulating through the arteries and veins of the monster, was conveyed back again, by the umbilical vein of the imperfect, into that of the perfect, fœtus; and that the heart of the well-developed child impelled the blood into the other child, which was appended to it, in the same way, as it caused that fluid to circulate through the vessels of one of its own limbs"[a].

Here, then, existed twins having no union by cohesion of any part of their bodies or members, but yet intimately—in-

[a] *Op. cit.*, p. 236.

deed we may say, vitally—connected by a community or continuity of vascular apparatus in the vessels of the cord, in consequence of which the same current of blood circulated through the systems of both, of which latter fact, my double child presents a most curious instance, but by an arrangement and an apparatus totally different, and, as far as I can discover, unique also.

Double Child, or Adherent Twins.

I am indebted to my friend Dr. Brabazon, of Downpatrick, for this very remarkable specimen of monstrosity by anterior duplicity, connected with which are several points of unusual interest. The drawing (Plate IV. Fig. 1) exhibits accurately their mode of connexion; and as, for the convenience of description, it will be desirable to distinguish the children by names, I propose to call such inseparable friends Pylades and Orestes.

The account of their entrance into life is as follows:—December, 1852. Mrs. ——, aged 42, was mother of six healthy children, never having had twins. Her last confinement was in December, 1846, six years since. In the present instance labour began about 12 o'clock at night, and her medical attendant saw her at 3 o'clock, when nothing particular was observed, the os uteri being but little dilated. Twenty minutes before 6 o'clock the liquor amnii was discharged. At 6 o'clock the presenting head, that of Pylades, began to descend, and soon passed the external parts, with the face turned forwards. Severe pains came on shortly after, with little or no effect, except to cause the expelled head to revolve, so as to bring the occiput under the pubes, and then another head was felt descending. An effort was now made to extract the first child, and failed; but after a few minutes the head of the second child, Orestes, was expelled with very little difficulty. The bodies of both came together immediately after; they showed no sign of animation. The soft parts of the mother sustained not the slightest injury. There was no subsequent hemorrhage, nor any other untoward accident: the mother recovered as favourably as usual, and was quite well in a few days. The placenta presented nothing peculiar, and the umbilical cord was single in its whole length, and in every respect similar to that of an ordinary case; but where it was inserted into the common abdomen there was a small space in which the integuments were deficient, and the intestines covered only by a membranous expansion. This deficiency of the abdominal integuments around the insertion of

Oreste

Pylade

Fig 2

the cord appears a very constant occurrence in these double monsters. Thus we have already had it noticed in Dr. O'Donovan's case, and it is specially represented in Cruveilhier's plate of his case: it existed also in Sir A. Cooper's monstrous fœtus, before alluded to[a].

The weight of the conjoined children was $9\frac{1}{2}$ pounds. Pylades measured in length 18 inches, and Orestes $17\frac{1}{2}$ inches. The circumference of both heads together was 21 inches, as was also that of the shoulders. The head of Pylades was 13 inches round; that of Orestes, 11. The heads of both were well formed; and, with the exception of a defective finger, there was no imperfection in any of the extremities.

In proceeding to examine them more particularly, I first took a plaster cast of them as they lay, and then had them injected with wax and vermillion, which was most successfully accomplished by Mr. Connor, Curator of the Museum of Trinity College, Dublin, who also subsequently took three casts in wax, exhibiting certain peculiarities in the internal anatomy and arrangement of parts, as viewed anteriorly and posteriorly.

The union between the children was complete from the sternum to the lower part of the abdomen, where the cord was inserted; the sternum of the one formed with that of the other an outline somewhat resembling the letter V; in all other respects the skeletons were single and normal, with this exception, that the anterior extremities of the left ribs of Pylades and the anterior extremities of the right ribs of Orestes were united to a common sternum, as were also the anterior extremities of the right and left ribs of each fœtus at the opposite side.

In the thoracic cavity were two distinct hearts, contained, as in Ritta-Cristina[b], within one pericardial sac, and two pair of lungs normal in character; the thymic glands were unusually small; the diaphragm was perfect, and divided, as usual, the thoracic from the abdominal cavity. The urinary and genital systems were perfect and distinct in each fœtus. There was only a single but large liver, and no gall-bladder could be found; there were two distinct spleens and pancreases, two pairs of kidneys and supra-renal capsules, and two distinct stomachs, each having its own duodenum, which, after passing a short way downwards, united into one common jejunum, which ended in *a capacious pouch*, from which again emerged two separate small intestines, that of Pylades being rather the longer, leading into

[a] See Guy's Hospital Reports, vol. i p. 233. [b] See Serres, Pl. viii.

the large intestine of each fœtus in the usual way; each fœtus having a distinct and perfect colon, appendix vermiformis, rectum, and anus.

The most curious and important fact connected with this remarkable specimen is, I think, to be found in the manner in which the circulation was carried on: the cord was single, and, as in ordinary cases, contained only one vein and two arteries of the usual size, which three vessels communicated exclusively with Pylades, Orestes having no umbilical vein, nor pervious umbilical arteries.

The umbilical vein, taking its usual course, and having entered the liver, passed directly into the vena cava ascendens of Pylades, having given off three pretty large portal branches, one of which passed into a small supernumerary lobe of the liver; in other respects the venous system was normal, with the remarkable exception that from the vena cava of Pylades a *very large branch* passed off though the substance of the liver entirely across, and ended by discharging itself into the vena cava ascendens of Orestes (see Plate IV. Fig. 2), so that a large portion of the renewed blood, arriving from the placenta by the umbilical vein, was at once transferred from the system of the one fœtus into that of the other. The vena azygos of Orestes was unusually large.

Of the arterial system it may also be said, that it was normal, with one other equally remarkable and corresponding exception as that just noticed in the venous system: it has been already remarked that in Orestes the umbilical arteries were impervious, or, indeed, only rudimentary, but to compensate for this want there was given off from his descending aorta, just above the source of the renal artery, a *very large branch*, which, passing under the liver, crossed over and discharged itself into the descending aorta of Pylades, and thus the used blood of both was returned to the placenta (see Plate IV. Fig. 2) through the instrumentality of an apparatus and arrangement which I believe to be not only very rare, but probably unique.

From this supernumerary large arterial branch, connecting the two aortæ, all the intestines below the duodena derived their vascular supply. There was very little meconium. I do not mean to assert that communication of both the arterial and venous systems is a new fact, as it has been observed in other forms of monstrosity where two bodies, united above, terminate in a common or conjoint pelvis, and there are only two lower extremities. Thus, Serres, in describing Ritta-Cristina, mentions "a large transverse branch, formed by the iliac arteries of each, and uniting the circulation of the

two children (see Plate VIII. and p. 224); and in Plate XIX. are represented anastomoses between both the arterial and venous systems; but I have not been able to find any instance of the double communication, such as I have just described, in the species of monstrosity which led to the writing of these observations. And it adds, I think, not a little to the interest of this matter, that the contrivance here put into operation for carrying on the circulation of Orestes, without his having any direct connexion with the umbilical cord or placenta, is, in addition to its singularity and completeness, rendered the more remarkable from the fact, that the vessels by which the desired end is attained are not usually in existence at all; so that they cannot be looked on as instances of vessels merely in a state of increased development, in order that they may act vicariously for some source of supply accidentally interrupted; nor can they be considered as a modification of some natural arrangement, more commonly recognised under other forms or relations, but as an entirely new apparatus, superadded, with infinite wisdom and obvious design, to effect a special purpose.

The pouch or sacculus also, above described as very capacious measuring about 5 inches by $3\frac{1}{2}$, is a curious part of the intestinal arrangement, and I am inclined to agree in the view of Dr. Parsons with regard to it, for it existed in the same situation, and with the same relations, in his case exactly as in mine; that it is intended "to supply the want of two regular jejuna; for, if these children had lived, each, having its own proper stomach, would probably have eaten a due quantity of food for its sustenance, and the office of the stomach might have been well enough performed, but each requiring a separate system of intestines to dispose naturally of the digested chyle, and this preternatural conjunction happening between them, the jejuna of both were confused together, and having room in the abdomen, these parts of their organizations that ought to have grown into two guts of a considerable length, being hindered from a regular accretion, the joint growing powers of both formed the sac of communication now before you, which is proportionably capacious enough to answer the purposes of two natural jejuna, below which the rest of the intestines of each child were sufficient to do their several offices"[a].

So far as I have been able to discover, Dr. Parsons' case resembles mine in the peculiarities of the vascular arrangements, more closely than any other, but not completely. In his case the cord was single, with one vein and two arteries,

[a] Philosophical Transactions, vol. xlv. p. 529.

both the latter belonging to the larger child, as in my case; but the vein bifurcating within the liver, so as to send a branch into the vena cava of each child; instead of having the additional large venous canal directly connecting the two cases, as in Pylades and Orestes. And again, he expressly describes and figures "an artery which," to use his own words, "arises from the aorta, about the place of the cæliac of the one child, running along before the liver, and is inserted into the same place of the aorta of the other. It was much larger than any other artery in either child, and bestowed branches on the stomach, mesentery, and mesocolon, being about five inches long, for there were neither cæliac nor mesenteric arteries, according to nature, in either child"[a].

It is greatly to be regretted that in so many of these cases no pains have been taken to obtain a knowledge of the internal arrangements and constitution of these anomalous products, or even to ascertain whether the placenta or cord presented any peculiarities; and, as a useful suggestion with regard to the best mode of conducting examinations of these monstrous productions, I think I cannot do better than also quote the words of Dr. Parsons, addressed to the Royal Society in 1748: —"None of these uncommon subjects ought to be touched with a knife until it is well injected, because the vascular system, where there are any preternatural adhesions or distortions, can never be understood or traced without it;" and I would suggest, in addition, that it would be better, in every instance, before injecting[b], to take an accurate cast of the external conformation.

ART. IX.—*Selections from the Unpublished Manuscripts of the late* ABRAHAM COLLES, *Professor of Surgery to the Royal College of Surgeons of Ireland.* Edited by his Son, WILLIAM COLLES, F. R. C. S. I., Surgeon to Steevens' Hospital, &c.

No. 1.—TETANUS.

KNOWING the vast importance of the assistance to be derived from the experience of others, and the great value of facts or cases recorded with care and impartiality, I have often been anxious to make public a selection from the numerous cases which have been collected by my late father, during a long professional career, extending from the time of his appoint-

[a] *Op. cit.* p. 531–2.

[b] *Op. cit.* p. 528.

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ment to Steevens' Hospital in 1794, until his death in 1843,—a period of half a century; but when I found that many of these were imperfect and unfinished, and many presenting nothing of novelty, I have as often deferred the labour, having contented myself with the preparation of two papers in former Numbers of this Journal on subjects to which he had specially directed his attention, and the cases referred to in which were more perfect. Still, I do not consider I have done enough to make known the extent of his labours, and I therefore purpose to give, from time to time, a selection of a few cases bearing on a particular surgical disease,—selecting such as are most perfect in themselves,—and record any fact that may suggest a deviation from the generally received opinions, and confirm or oppose the theory or practice at present adopted.

With this view I shall commence with the subject of Tetanus, the cases of which are not so numerous as in other diseases. Some of them, moreover, support, I think, those distinctions of the disease which I ventured to suggest in a paper in the thirteenth volume of this Journal. I must previously state, that I have condensed the details as much as possible, omitting, however, no fact of interest or importance; but where the daily reports present no important point of difference, or the directions for the administration of remedies, which were so much used formerly, might be briefly stated in general terms as to the treatment pursued,—I have used considerable freedom with them.

I have appended a Table of the Cases, by which may be seen at a glance the great differences as to the various periods and causes of the disease, and from which it may also be learned that we can derive no certain, or even probable, rule, either from the severity of the cause of the disease, or from the lapse of time to its invasion, to guide us in forming an opinion as to its probable duration or result.

Case I.—Joseph M'Keon, aged 38, admitted into Steevens' Hospital, September 19th, 1804, with symptoms of trismus. He cannot assign any cause for them; no wound; no unusual exposure to fatigue or cold; nine days ago he felt pain in his back, and could not open his mouth or swallow; three nights before admission he had a severe fit, from the report, resembling a paroxysm of tetanus; paroxysms now are slight and not frequent. He was purged, put in a tepid bath, and ordered a grain of opium every third hour; pulse 80; head bent back; abdomen tense and retracted; motion of his head brings on a paroxysm. He sweated profusely after the bath.

September 20th. He felt himself better, could open his mouth wider. Pulse 108. In the evening the paroxysms were much more violent and painful, and he felt as if there was something in his throat he could not spit up. Sweats profusely; paroxysms more frequent, one every five minutes; sweats with the pain of the start; swallowing worse; left leg became quite stiff. Ordered two drachms of mercurial ointment, to be rubbed in every second hour, and to have the bath.

September 22nd. Slept well, feels better; spasms less severe; drinks with more ease; in the evening spasms became more frequent, not violent or long continued; bowels affected; passes urine with difficulty; gums slightly swelled; mouth affected.

September 23rd. He had some tenesmus; pulse 120; paroxysms very frequent, though slight; very sleepy; there is some delirium; swallows but badly, the drinks being rejected with force.

September 24th. No delirium, complains of hiccough; belly soft; swallows with difficulty; pulse very quick; delirium towards evening. What he calls the rattles in his throat prevented his sleeping.

September 25th. Countenance sunk, covered with sweat.

September 26th. Free from spasms during the day; swallowing very difficult. He died this day.

Case II.—Eaton, a clerk, aged 45, admitted July 10th, 1809. Twelve days ago he felt stiffness in his jaws and back of the neck; three days after, he was admitted, when he could open his mouth so as to admit the middle finger. His face was but slightly indicative of the disease; mouth not retracted or belly tense, nor did he complain of viscid saliva in the fauces. He was put in a warm bath, and ordered a grain of opium every second hour, to be increased to two grains.

July 16th. Symptoms worse. On coming out of the bath he had a general spasm; swallowing much worse, could scarcely get down the pill; he complained of viscid saliva in his throat.

19th. Cannot admit the end of a spoon between his teeth; the angles of his mouth are retracted; abdomen not hard; lower extremities are rigid; great pain in passing urine; no pain from sternum to the back; attempts to swallow bring on a spasm; he sits up in bed. He got an enema, which operated and gave him relief. To continue the opium.

20th. Muscles more relaxed; swallows better.

21st. Perspiration more profuse; jaws more relaxed; feels better in every way, but thinks the spasms of his back are

more frequent; transient delirium during the evening. Pulse 104.

22nd. Very restless last night; delirium; could scarcely be kept in bed; drinks a vast quantity without much distress, but rejects nearly one-third by some convulsive effort of the organs of deglutition. Towards evening his breathing became affected. Spasms much less severe, countenance pale. Pulse 106. Ordered wine; got an enema, which acted well.

23rd. Frequent but slight spasms while dozing or drinking; and discharges viscid saliva from the throat.

24th. Had delirium last night; seems much better this day; can slightly bend his legs, but the effort brings on a spasm.

27th. Nearly the same state until evening, when he was seized with difficulty of breathing, had a general tremulous motion all over, and died.

Case III.—Bryan, aged 32, admitted March 14th, 1809. He has been working hard planting potatoes. On the 8th he felt himself dull, and next day complained of a sore throat; the following day he was admitted. When he attempts to speak a few sentences, his face becomes suddenly distorted, the angles of the mouth drawn backwards, the eyelids drawn so as to half close the eyes; complains of soreness of his throat and difficulty of swallowing; no external swelling; skin hot and dry; pulse 64.

Next day worse; difficulty in swallowing increased; spasmodic distortions of face more frequent; in the intervals countenance nearly natural; no pain at ensiform cartilage; has an increasing desire to yawn, but cannot; can turn his face to the left side, but turning to the right is stopped by pain, which he refers to the os hyoides, and says, when he draws his breath the drink goes down; mouth can only admit the middle finger; is sleepy, but starts out of sleep; feels a thick spittle in his throat which he cannot get up.

15th. Profuse perspiration after a bath; spasms less frequent but not less severe; coughs after drinking; pulse 68.

16th. Can swallow much better; had a profuse perspiration last night.

19th. Free from spasms; jaw could be opened a little more; has profuse perspirations; pulse 34; bowels confined. [No further report.]

Case IV.—John Boy, aged 16, admitted May 4th, 1802. Had lain on the boards for seven nights, when he perceived a stiffness in his jaws; it was not preceded by any affection of the throat or twitching of his limbs; his jaws became gradu-

ally more stiff. Two or three nights after the stiffness began he bit his tongue. Seven days from the commencement of the disease he was admitted into Steevens' Hospital. At different times since admission he had what he calls convulsions, in which he bit his tongue, the dread of which prevents his lying in bed; his abdomen is tense and hard; great thirst; pulse 110. Says the convulsive attacks are not preceded by any pain at the ensiform cartilage. He was ordered a warm bath, a purgative enema, and a grain of opium every second hour. Says he has felt relieved from the bath; passed a better night; is troubled with a cough; bowels free; much thirst; can open his mouth more widely; pulse 128.

May 10th. Says the baths weaken him very much; to continue the opium, and to have wine.

12th. Pulse 84; pain in his back is gone; had a severe fit of sneezing and coughing, and bit his tongue while asleep. [No further report.]

Case V.—Mary Malone, aged 22, admitted September 1st, 1803. Ten days ago, while riding, was thrown from her horse and fell on her elbow; her left leg was also caught in the spikes of a carriage, causing a wound which her efforts to extricate herself increased considerably. On admission, the wound was black and much swollen. Yesterday the sloughs had separated, and the wound looked healthy; discharge slight. Two days ago she felt some uneasiness in swallowing; complains of pain in her back; startings in the limb; no twitching of the muscles of her face; frequent efforts to spit up a viscid saliva; sweats profusely; starts from her sleep in violent pain, and bites her tongue; has no general spasms; pulse 110; bowels costive. Ordered one grain of opium every second hour, to be increased; and a warm bath.

3rd. Sweats profusely; spasms more severe; tetanic expression more marked.

4th. Spasms, principally in the head and neck, almost constant.

9th. Continued increasing in severity and frequency until this day, when she died.

Case VI.—Mary M'Cabe, aged 38, admitted September 4th, 18—. On Sunday week a car passed over her right foot, scraping off the skin. Last Wednesday she complained of stiffness of her jaws, and difficulty in swallowing, and tetanus set in. Thursday, slough cast off from the foot, and an incision was made through the wound, without affording any relief to the symptoms. Ordered opium.

Thursday. Cannot swallow the pills, or even liquids, without great difficulty. Ordered the opium in enemata, and to have a warm bath, which she says weakened her very much. Sweats profusely; convulsions are slight but frequent; she feels as if a rope were pulling her head back; her hands are much contracted.

5th. Respirations slow; very sleepy; constant starting of her hands and feet, more of the injured limb than the other. [No further report of this case.]

Case VII.—Stephen Lalor, aged 12, admitted August 18th, 1802. A car fell on his right leg, and he was brought into hospital. There is a wound about an inch above the ankle, and through this the upper portion of the broken tibia protruded. Extension was made, but the bone could not be adjusted; the limb was laid on the side, and he was bled to twelve ounces; he had some starting in the limb at night.

19th. Was feverish; pulse 112. Again bled and purged.

22nd. Had a good night. A healthy purulent discharge from the wound.

24th. On endeavouring to eat, he felt some stiffness in his jaws, and sudden inability to swallow. He was ordered a grain of opium. After the spasm his face was bedewed with a copious sweat; spasms recur only on his attempting to swallow; pain in the sternum; head retracted; throws up viscid saliva after attempts to drink; belly tense and retracted; hands not affected; wound of leg looks well; no pain in it till an incision was made.

24th. Bowels confined; an enema was administered; pulse full, and so quick as to be with difficulty counted; breathing quick; sweat profuse. Died this evening.

Case VIII.—April 27th, 1806. Hugh Maguire, aged 19. His right hand and arm were caught in a mill, and he was brought to hospital; immoderately talkative; singing; incoherent. His friends refused to allow amputation; the skin was torn all round above the elbow, and drawn down nearly to the wrist; the muscles were bruised, and some torn across; the wound was brought into apposition, and he was bled to twenty ounces; suffered great pain in the arm that night.

29th. Thin discharge from the arm, has a fetid odour; skin livid; abscess found under the skin at the elbow; was let out.

May 11th. Gangrened skin all separated; complains of some stiffness in the jaws; while dozing his tongue was caught between his teeth; no stiffness in neck; pulse 88. Ordered

one grain of opium, to be increased to two grains, every hour. Can swallow fluids better than solids.

15th. Jaws more closed; tongue caught three times yesterday while dozing; countenance altered; angles of mouth drawn back; eyelids contracted like a short-sighted person, wrinkling of the forehead.

17th. Rested better; did not bite his tongue while he kept a cork between his teeth: when this was bit across, his tongue suffered; sweats much about head; abdomen retracted and tense; pain on passing urine; thinks he can open his mouth better.

18th. Vomited; while asleep his legs shook violently; breathing irregular; violent itching of the skin.

21st. Got calomel and jalap, which procured one large stool, soon after, he felt as if going to die; sweats very profusely; complains of phlegm in his throat; slept constantly; marks of tetanus less strong, can open his jaws wider; frequent desire to pass urine; appetite.

25th. Cough very troublesome; pain on dressing wound makes his jaws close, which have become more tight on omitting the opiate.

June 7th. Tetanic symptoms same as previously, with occasional alterations; appetite improved; complains of his chest.

10th. Expectorated a large quantity of purulent-looking mucus; complains of pain in the left side.

12th. Cough worse; expectoration profuse, phlegm does not come with the cough, but he says it must collect in some quantity in his throat, which he discharges by vomiting.

15th. Ordered two pints of wine; back stripped from lying.

21st. Had purging for three days.

28th. Cough very troublesome, throws up a fluid like barley water, which flows in a stream for a second or two after each cough, feels that it weakens him; pulse small, 120.

29th. Fluid expectorated less; breathing much impeded; arm looks healthy; pus of a good consistence.

30th. Pain of side better, but died.

Case IX.—March 22nd, 1806. Maryanne Daly, aged 22. Her foot was so distorted that she was unable in consequence to earn her livelihood; it was amputated below the knee this day; some arteries were tied; one between the tibia and fibula could not be secured, though the parts were dressed upwards to try and seize it. It, however, ceased bleeding on the tourniquet being loosened; she vomited after the operation, but this ceased when the bowels were freed.

April 3rd. Since the operation she complains of pain in the stump at night; none by day; discharge good and free; this day she first felt uneasiness in her jaws, increased by efforts to swallow; sweats a good deal. Ordered opium.

5th. Had some vomiting; got an emetic; mouth now closed; abdomen hard and prominent. Cathartic enema, and continue the opium. She complained of pain in the stump and much starting in it; one ligature remaining was cut away; catamenia appeared. Ordered wine.

8th. Stump started more, applied the tourniquet, which, she thought, relieved it.

9th. Worse; the startings now engage all her body. Wine and porter, and opium.

10th. Has a severe cough; sweats profusely; can move the head; sits up in bed, when dozing her head falls forward on her knees, and she starts with a spasm.

13th. Eyes heavy; stump not so well; pain in scrobiculus cordis; increased difficulty of drinking.

16th. Worse; pulse 120; startings more severe.

20th. Felt she was dying; much mucus in the trachea; became restless; breathing more difficult; was perfectly sensible till 4 o'clock, when she died.

CASE X.—John Farrell, aged 15. August ——. Struck the heel of his right foot against a stone; the wound was very small and trifling; four days after, he went to bathe, and in the evening complained of a soreness of his throat; he was admitted two days after. Tetanus strongly marked; paroxysms almost every minute; pulse 150 in the spasms, in the intermissions 96, his head is drawn back during the paroxysms. The wound is on the thick skin of the sole of his heel, not larger than would admit the end of a probe; it afforded a small gluey discharge; a crucial incision was made into it. Ordered one grain of opium, and this to be increased, and to be put in a warm bath; when in the bath the convulsions ceased; he moaned, and seemed so weak that he was taken out of the bath after five minutes, and in five minutes after, he expired, his hands strongly clenched.

CASE XI.—John Cody, aged 9. March 30th, 1813. The wheels of a waggon passed over both his legs; the skin was torn from the right, and hangs in flaps behind, leaving the tibia bare on left leg; the integuments were lacerated, and also the tendons are bare and torn; no hemorrhage; at night he became delirious; pulse quick, hard; skin dry.

June 1st. Frequent startings in the limbs; some twitching in the muscles of the face; raved constantly, and made frequent efforts to get out of bed; there is a large and fetid discharge from the wounds.

5th. Spasms still continue; wounded parts of right leg appear black.

7th. Complained of difficulty of opening his mouth.

8th. Much tossing of limbs; spasms more general; head is retracted; muscles of neck and back rigid; lower extremities drawn up; spits a viscid saliva.

9th. Had two severe and general spasms; soon after he died.

Case XII.—James Lawler, aged 36. May 6th, 1814. Four hundred weight fell five or six feet on his hand. Considerable laceration, bones of fingers and hand ground into small pieces; on the next morning he was admitted; hand livid; bones projecting; little pain. A week after the accident, he complains of uneasiness of the throat; any effort to drink induces spasm of pharynx; angles of mouth retracted; forehead corrugated; tetanic countenance; muscles of lower jaw rigid; no spasm or pain in hand or arm; no fever.

13th. The arm was amputated four inches below the elbow; easier since operation; abdominal muscles hard and tense; profuse perspiration.

14th. Tightness of throat returned; some cough; pain from sternum to back; had the paroxysm during the day. [No further report.]

Case XIII.—Thursday, June 30th. A woman was delivered a fortnight before, of her sixth child; this child died on Saturday, 25th; she was exposed to cold on the 26th; that evening she felt tightness of her jaws. She was ordered opium and mercurial ointment.

Friday. Could open her mouth better. Had two or three paroxysms that day, and died.

Case XIV.—Mr. M'Evoy told he me lost a man who had lock-jaw on the forty-second day after the fracture; this he ascribes to the man taking off his bed-clothes.

No.	Name.	Age.	Sex.	Cause.	Interval between Cause and Disease.	Duration of Disease.
1	M'Keon,	38	M.	None, ...	. . . . .	16 days.
2	Eaton, .	45	M.	None, . . .	. . . . .	15 „
3	Bryan, .	32	M.	None, ...	. . . . .	Not stated.
4	Boy, . .	14	M.	Cold, ...	. . . . .	8 days.
5	Malone, .	22	F.	Lacerated wound,	8 days,	11 „
6	M'Cabe, .	35	F.	Ditto, . .	10 „	5 „
7	Lalor, .	12	M.	Fractured leg, .	6 „	1 „
8	Maguire,	19	M.	Lacerated wound,	14 „	30 „
9	Daly, . .	22	F.	Amputation, . .	12 „	17 „
10	Farrell, .	15	M.	Laceration, . .	4 „	3 „
11	Cody, . .	9	M.	Fractured leg, .	1 „	10 „
12	Lalor, .	56	M.	Crushed hand, .	7 „	Not stated.
13	—	. .	F.	Parturition, . .	14 „	2 days.
14	—	. .	. .	Fracture, . . .	42 „	Not stated.

I have selected these cases as presenting great variety in their origin, course, and symptoms; they were all treated on the same plan, viz., opium in large and increasing doses, with the warm bath once or twice a day; two used mercury in addition, and I do not think the result would encourage us to place much reliance on these remedies. The warm bath caused the most profuse perspiration, while it considerably weakened the patients; opium seemed to produce its effects without in the least influencing the disease; one patient died well salivated, the mercury did not produce its action in the second, nor did it seem to influence the disease. Amputation was unavailing once the disease had set in; we also find that the disease may come on after amputation without any previous injury; and that it may follow a clean incised wound. Again, as to the form of tetanus, the proportion of cases of idiopathic to traumatic was much greater than at the present day we would expect to exist. Thus we can draw no rule or even form an opinion from the nature of the injury causing, or the time that has elapsed from the receipt of injury and the commencement of tetanus, as to the probable severity, rapidity, or result of the disease. It appears to me doubtful how far the case of Bryan could be considered as tetanus; the symptoms are not strictly such as we should expect to find in the genuine disease. The case of Cody was evidently a case of that form of the disease I endeavoured to describe in the paper already referred to. How far the case of Daly could be ranked in the same category seems a doubtful point. The case of Maguire is one showing that, although the tetanus may be cured, still the patient may die from an affection of the chest, most likely produced by the disease.

Art. X.—*Notes on the Climate and Diseases of the City of Cork.* By John Popham, A. B., M. B., Physician to the Cork North Infirmary.

The city of Cork lies in an irregular valley, which is open to the east and west, but is confined by hills at the north and south sides. On the west it is connected with the fertile valley of the River Lee, which, rising from the secluded mountain-lake of Gougane Barra, so well known for its romantic scenery, flows in a devious course through a country of unexampled beauty until it reaches the city of Cork, where, receiving a large tidal accession, it is rendered navigable to its mouth for vessels of considerable burden. When the Lee is about a mile west of the city it divides into two channels which gradually diverge, but re-unite again, thereby insulating a considerable tract, upon which the main part of the city is built. This tract is not free from the defects natural to its low position, and being permeated by some small streams from the main branches, inundations occur when the river is swollen by heavy rains and high tides, especially when the latter are driven in by an easterly wind. From this cause the city anciently derived its not very flattering name: Corcagh signifying a morass. Before the marshes were drained, the city was small, occupying chiefly the present north and south suburbs, so that when Dr. Gerard Boate, physician to Cromwell's army, published in 1642 his Natural History of Ireland, he assigns the *town* of Cork but the fifth or sixth place, ranking it with Londonderry, and after Dublin, Galway, Waterford, and Limerick[a]. Since then art has remedied many of these disadvantages, and places within the arms of the river have been rendered eligible sites for streets, some of them, strangely enough, retaining their popular name of Marshes. The smaller inosculating channels have been arched over; the river has been confined by handsome quays to its two divisions, and the main branches have been deepened, so that the tide rises to an elevation varying from sixteen to twenty-one feet at the bridges, thus allowing the large channel steamers to load and unload in the midst of the city. Most of these changes have been effected within the last century.

The excellence of Cork harbour for its security, and the facilities for trade which it affords, have produced slow but certain effects. Still, regarding Smith's estimate, in his History of Cork as correct, namely, that the city trebled itself in the

[a] Boate's History of Ireland, p. 6.

forty years preceding 1749[a], when he wrote his work, and taking his return of 7366 houses in 1732, with a probable population of seven to a family, or 55,769 persons,—the ratio of the progress of Cork in size and population does not seem, according to the last Census, to have been proportionate. If, however, we take up Smith's map of the city, published in 1750, we shall obtain juster notions: the whole aspect of Cork, with the exception of the churches, having become so changed, that without these landmarks it could now be scarcely recognised.

The insular extent embraced by the north and south channels being fully occupied, presents limits rather detrimental to the commercial development of the city. There are no sites, either, for handsome squares, such as are seen in other cities. The rising grounds, therefore, north and south of the river have been availed of for terraces and villas, delightfully open to the sun, and affording many of the advantages of a more genial climate; several of these are occupied by merchants, who convert their shops or warehouses in the flat of the city to purposes of business. That part of the northern hill which is to the west of the city constitutes the delightful locality of Sunday's-well, the Montpellier of Cork as it was called, once so famous for the health and amusements of the citizens, and now covered to the water's brink with seats and gardens. The continuation of this hill below the city, and leading to Glanmire, has also been largely built on, though the houses have not much uniformity, so that, viewed from the river, it looks like a distinct city, and may be justly named New Cork. These picturesque terraces, forming the background to the charming scenery of the Cork river, have added much to its effect, giving the grouping and colouring of art to the graceful outline of nature. The northern hills swell abruptly in some parts from the river, and are fringed to the top with trees, and spotted with villas, some on a scale of almost princely magnificence. The green richness of the plantations in summer, and their mellow tints in autumn, afford views which are unrivalled, and make the fame of the Cork river no idle boast. The road leading to Glanmire skirts the margin of the river for nearly three miles, and forms a most agreeable resort. The river runs due east for this distance, and at Blackrock Castle it bends to a south-east direction, forming the grand expanse of Lough Mahon. Some of the beauty of the river near the city has been sacrificed to utility. It used to spread itself over a large space, looking, when the tide was full, like an exten-

[a] Smith's Cork, vol. i. p. 401.

sive inland lake; but the channel became choked with the alluvial deposit rolled down by the current, and required a large amount of labour and expense to keep it navigable. An embankment was thrown out for the space of a mile, separating the bed of the river from the part covered by the tide; and this ground has been lately reclaimed and set apart for a city park, along which the Passage Railway winds its course.

The *physical features* of the vicinity of Cork require a few observations. A valuable paper has been written by Mr. Weaver on the Geological Relations of the South of Ireland. He observes, that high mountain chains commence in the western borders of Kerry, and extend thence in an eastern direction to the county of Cork, between the Rivers Lee and Blackwater, giving the picturesque appearance which distinguishes the scenery of these rivers. These chains are not so continuous as to present an unbroken range, but send off various lateral elevations, running nearly parallel to them, and intersected by glens. Between the two principal parallel chains, wide and deep valleys lie in a longitudinal direction, and form the channels of streams and rivers. The height of these mountains in Kerry is considerable: that of Gurrane-Tuel, the highest point in Ireland, is 3410 feet above the sea level; but this elevation declines gradually to a few hundred feet. The hills at the north and south of the River Lee form part of these mountain ranges.

The *geological character* varies at different sides of the river. The north side consists of grauwacké and slate; the sandstone is of a deep red and coarse structure; it is in parts very hard and difficult to be worked, but varies from the hardest grit to clayey rubble. In boring the tunnel of the Great Southern and Western Railway, much greater difficulty was experienced in working this than was expected. It was curious, that the very great hardness frequently yielded to the chemical influence of the atmosphere,—some kinds, when long exposed, becoming totally disintegrated. This grauwacké formation extends along Glanmire. An isolated limestone strip, about two miles long, is found at Blarney, containing but few organic remains[a].

The southern hill of the Lee consists of limestone of the transition series, and forms a continuation of a band varying in width from five miles to half a mile. It commences easterly at Youghal Bay, occupies the smaller islands of Cork harbour, then appears at the peninsula of Blackrock, and continues to keep the southern bank of the Lee until its junction with the Bride,

[a] Transactions of the Geological Society of London, Second Series, vol. v.: "On the Geological Relations of the South of Ireland," by Thomas Weaver, Esq., F.R.S.

when it leaves the former river, and, keeping to both sides of the Bride for a short distance, ceases at the left bank, but continues at the right to Castlemore Castle, fifteen miles from Cork. This is flanked by more or less elevated ridges of grauwacké and slaty rocks, with which it interstratifies at their confines. The angle in which the strata are inclined to the horizon approaches at times near the vertical, but is chiefly between 70° and 80°, dipping to the south.

The organic remains of the Cork limestone were mostly determined by the careful scrutiny of the late Mr. Samuel Wright, of Cork, aided by Mr. Sowerby. He derived them from the quarries of Evergreen, close by the city, and Ballinlough, on the south of the Lee. Of Invertebrata there are found—of the crustacea, some undescribed trilobites; of mollusca, cephalopoda, comprising some orthoceratites and nautili; of conchiferæ, various species of productæ and spiriferæ, also some polyparia and crinoidea. Traces of Vertebrata also have been found: casts of the vertebræ of fish were discovered by Miller. In the Blackrock quarries some beautiful specimens of amethyst have been dug up. Wavellite has long been found at Tracton Abbey, a few miles from this city, in sufficient quantity to supply the London mineralogical market; and, during the last year, a very pure silica, fitted for the manufacture of the choicest porcelain, has been discovered at Rostellan, on the eastern side of the harbour.

The difference of the soil at both sides of the river was noticed by Smith. "The north side," he says, "being coarse and hilly, is not so well cultivated as the opposite, which, being a fine limestone soil, affords plentiful crops to the industrious farmer"[a]. The earth of the north side is mostly a yellow, gritty mould, which requires lime. Clay for bricks and potteries is found in abundance near Douglas, two miles from Cork.

In the vicinity of the city, the numerous valleys which lie parallel to the hilly ranges, or cross them, are frequently overflowed, forming large bogs. In the basin of the Lee, to the west of the city, a vast marshy tract exists, extending to the very margin of the city, and in winter, when much rain has fallen, lying submerged for days and even weeks. In very high floods, the Dyke-walk and houses are inundated. Another of these large boggy tracts extends for miles between Blarney and Cork; and at the south side a deep and almost impassable morass, called the Ballyphehane bog, reaches from Evergreen to Douglas, and is crossed by the Bandon Railway, in forming which peculiar engineering difficulties were experienced from the yielding na-

[a] Smith's Cork, vol. i. p. 354.

ture of the soil. Besides these fresh-water marshy tracts, there are others to the east of the city partly saline, being exposed to the tides; to them belongs the ground lately reclaimed from the river. The constant evaporation from these large humid surfaces must keep up a peculiar hygrometric condition of the atmosphere.

Indeed, the city of Cork has obtained a degree of *notoriety for rain* much more than it deserves. A Cork mist, like a Killarney shower, is a common jest with travellers. This charge of perpetual humidity, brought against the climate, may certainly receive some countenance from the miry streets, which strike female tourists with dismay. It is, unfortunately, a question as yet unsettled, though affording scope every year for much civic eloquence, whether it is the duty of the private citizens, or of the public commissioners, to keep our *trottoirs* clean.

On making a careful examination of the registry of the weather, taken at the Royal Cork Institution by Mr. John Humphreys, the Librarian, I find that the average annual fall of rain for twenty-five years, to the end of 1852, as determined by the pluviometer, amounts to 38·096 inches; this high average being caused by the six years from 1846 to 1851, both inclusive, in which it rose to the very large amount of 51·542 inches. For the twelve years ending in 1839, the annual average did not exceed 34·212 inches. The extremes of variation are very great,—from 25·438 inches in the year 1844, to the unprecedented quantity of 60·375 in 1848. The difference of rain, in inches, between the years 1845 and 1846 is very remarkable, there being an increase of twenty inches in the latter, which was the year of the potato blight; the rains in 1845 being 32·783, and in 1846, 52·553 inches. From 1846 it continued to increase to sixty inches in 1848,—a period in the annals of this country terribly distinguished for famine and fever, from which year it has declined to 37·653 in 1852,—affording thus a rational expectation of the return of the seasons to their ordinary average. It is curious, that the end of the year 1852, in which so much rain fell in other places, was not characterized in this part of the country by an amount more than usual, though the number of rainy days was considerable. In the month of May, 1844, we find the least monthly amount, only 0·144; and in December, 1847, the greatest, being 16·171 inches; in January, 1851, 14·561 inches fell. In dividing the annual quantity of rain by the seasons, we find, in the year 1852, for winter (including the months of December, January, and February), 12·832 inches; for spring, 5·413; for summer, 8·030; for autumn, 11·372: the quantity of rain during the

winter season is rarely less than one-third of the whole annual amount, and usually exceeds it; the least quantity is in the spring.

In calculating the fall of rain in Cork, I wish to state, that the Royal Cork Institution, where it was estimated, lies on the borders of the river, in the flat of the city, and the rain-gauge is kept at a height of about twenty feet above the sea-level. Recent observations have elicited the curious fact, that nothing is more variable than the quantity of rain falling in places near each other in horizontal distance, but of different degrees of elevation, local causes exercising a considerable influence. This variation was found by Colonel Portlock to exist in Cork. In an interesting paper, read before the Cuvierian Society, the quantities noted at the Cork Institution and the barracks, in the year 1848, were respectively 48·613, and 33·410 inches,—thus making the amount which fell in the flat of the city one-third greater than at the barracks, which are built at a considerable elevation above the city, but less than half a mile in horizontal distance. "The elevation of the barracks places them," he observes, "in a drier stratum of air, and the form of the hill on which they stand allows air charged with moisture to spread easily and descend." Whether this reasoning be founded on correct principles, I cannot say, but it is curious that a conclusion opposite to it is arrived at by Mr. Miller, who gives, in a paper printed in the Philosophical Transactions for 1849, the results of his interesting experiments on the fall of rain at various heights in the lake district of Cumberland and Westmoreland. His theory is, that the degree of humidity increases with the elevation, arriving at its maximum at about 2000 feet above the level of the sea[a].

The number of rainy days in Cork is not so great as might be anticipated from the annual amount of rain. In the register kept at the Cork Institution, the fall of the one-fiftieth part of an inch is considered to constitute a rainy day. Of these the number during twelve years, from 1841 to the end of 1852, gives the yearly average of 134, which is less than in many other localities. The extremes are indeed very distant, varying from 96, in 1843, to 172, in 1848, the latter number being in correspondence with the large amount of over 60 inches which fell in that year. Distributed among the seasons, the average of the twelve years gives for winter, 39 days; for spring, 30; for summer, 29; for autumn, 36. The maximum monthly number of wet days was 25, in January, 1851; the minimum,

[a] Philosophical Transactions, vol. cxxxix. p. 73.

one day in May, 1844. The month of January afforded the greatest average number of rainy days, the mean of twelve years being fifteen days: the months of June and July gave the minimum of about nine days. The months of October, November, and December of 1852, and January of this year, have been unprecedented for the number of rainy days, which amounted to 80 in the four months. But though the mean number of rainy days is comparatively small, the amount of variable weather is considerable, there being an average of seventy days in which showers, mists, or fogs occur, but not yielding an amount of water appreciable by the rain-gauge. Snow is rarely seen more frequently than three or four times a year; in the month of February of this year, when Dublin was visited by such heavy falls, Cork had it very lightly. Frost occurs about twenty-four times in the course of the year. The average of seven years, from 1846 to 1852 inclusive, gave but twenty-four nights in which the self-registering thermometer descended to 32°, or below it. In the order of the years, the numbers were, 34, for 1846; 29, for 1847; 39, for 1848; 14, for 1849; 24, for 1850; 19, for 1851; and 10 for 1852. Hail rarely falls more frequently than five or six times in the year; on May 9, 1851, hailstones fell equal in diameter to the $\frac{7}{16}$th of an inch; but this storm was general in Ireland, having done great mischief in Dublin. Thunder and lightning sometimes happen but once, seldom more frequently than four times in the year. Meteoric phenomena are very unusual; a note in the registry on September 4, 1851, states, that a funnel-shaped cloud, like a water-spout, approached at 12 o'clock at noon very near the ground, rain following two hours after. We possess little information of any exactness upon the state of the climate before our own time. In Dr. Rogers' Essay on the Epidemic Diseases of the City of Cork, published in 1734, we find some Tables of the weather, but too loosely noted to be much depended on. For twelve months, from 1st May, 1721, to 30th April, 1722, his observations were the following:—Rain, 80 days; mist and showery, 119; fair, 139; snow, 4; hail, 3; days not given, 20[a].

The *variability of the atmosphere in density* is such as may be expected in so changeable a climate. The results of the barometric tables for the seven years between 1st January, 1845, and 31st December, 1851, are the following:—The highest point of elevation which the barometer reached in that period was on February 11, 1849, when it rose to 30° 88′; the lowest point of depression for the same period was on

[a] Essay on the Epidemic Diseases of Cork, by J. Rogers, M. D.

January 15, 1851, when the mercury fell to 28° 61′; thus giving for the seven years an absolute range of 2° 27′. The mean of the absolute maximums of *each* of the seven years was, 30° 60′; the mean of their absolute minimums was 28° 71′, yielding thus a mean absolute range of 1° 89′, and differing by 38′ from the total absolute. The mean of the highest monthly pressure for seven years was, 30·37°, the mean of the lowest, 29·27°; the mean annual pressure, 29·85°. The monthly range for seven years gave for January an interval of 1° 33′ between its highest and lowest points; for February, 1·17°; March, 1·33°; April, 1·13°; May, 1·07°; June, 0·94°; July, 0·86°; August, 0·81°; September, 1·18°; October, 1·24°; November, 1·43°; December, 1·41°. We find thus, that the months of November and December afford the greatest range, while those of July and August afford the least. The mean of the whole is 1·16°. The time when the pressure was greatest occurred in the autumn and winter months, and the times of least pressure at variable periods in the same seasons, the extremes approximating in spring and summer.

The comparative frequency of particular winds is an important element in climatic descriptions, especially in their bearing on health and disease. In examining the registry, the great preponderance of the westerly winds over the easterly is remarkable. I have computed the duration of each wind for nine years,—viz. from 1844 to 1852, both inclusive, and have found that the average annual constancy of each at a given period of the day was the following, taken in order of frequency:—The north-west, the most constant, blew for 75 days; the west, for 72; south-west, 63; south-east, 37; north, 32; east, 30; north-east, 28; south, 27. As to the prevailing wind of each month it is very variable. In the months of January and February, the north-west, west, and south-west, contend for predominance, the former more frequently recurring than the others. In March it sometimes happens that the north-west blows for a continuance, but it is varied by a run of easterly and north-easterly gales, these occasionally, but not always, being the prevailing winds. In April the north-west blows for about seven days, the east and south-east sometimes taking the lead, and more rarely the westerly. In May the south-west prevails, but in some years, biting easterly gales occur. In June and July the south-west and west are the chief, the latter blowing about eight days. In August we again meet the north-west, diversified with the west and south-west. In September the easterly breezes again make their appearance, the three points of east, north-east, and south-east,

often occupying more than half the month. In October the prevalence is disputed by the easterly points and the north-west, but the latter is the more usual. In November the westerly winds blow frequently, but sometimes in this month, and in December, northerly winds blow for several days in succession; the north-west is usually the chief. The south-wind is the least frequent of all our winds, seldom blowing in any month more than four or five times, and preferring, contrary to what is popularly supposed, the colder to the warmer seasons.

The *mean annual temperature* of Cork for the three last years amounts to 51·5°; distributed among the seasons, we have for winter a mean of 42·4°; for spring, 50·6°; for summer, 62·3°, and for autumn, 50·5°. The mean temperature of each month is as follows:—January, 40·2°; February, 44·3°; March, 46·3°; April, 51·3°; May, 55·3°; June, 61·3°; July, 63·8°; August, 62°; September, 58·6°; October, 50·2°; November, 43°; December, 42·8°. The difference of the mean temperature of the winter and summer seasons is 19·9°, and of January and July, the coldest and warmest month, is 23·6°. The difference of the mean temperature of the successive seasons is, of winter and spring, 8·2°; of spring and summer, 11·7°; of summer and autumn, 11·8°; and of autumn and winter, 8·1°; showing that the transition from the extremes of temperature is gradual and not sudden. This is still further shown by the difference of the mean temperature of the successive months. Thus, between January and February we have a difference of 4·1°; between February and March, of 2°; March and April, 5°; April and May, 5°; May and June, 6°; June and July, 2·5°; July and August, 1·8°; August and September, 3·4°; September and October, 8·4°; October and November, 7·2°; November and December, 0·2°. Here the maximum differences are at the period of transition of spring to summer, and the months of autumn. The mean monthly range for three years gives us 27° as the interval in January, between the maximum and minimum temperatures of 53° and 26°; in February, 21°, between the extremes of 55° and 34°; in March, 21°, between 57° and 36°; in April, 28°, between 64° and 38°; May, 31°, between 71° and 40°; June, 26°, between 75° and 49°; July, 28°, between 78° and 50°; August, 26°, between 76° and 48°; September, 24°, between 72° and 48°; October, 28°, between 64° and 36°; November, 22°, between 59° and 37°; December, 27°, between 56° and 29°.

The absolute range of the thermometer must be greater in proportion to the length of the period examined up to certain

limits, but, estimating it during seven years, we can fairly conclude that we have very nearly reached the highest and lowest extremes which the mercury undergoes in this part of Ireland. The extremes, as given by the self-registering thermometer, were, for the highest degree, 84° on 14th June, 1846, and the lowest, 20° on 17th January, 1850; thus giving an absolute range of 64°. This range does not, however, occur in any one year. For instance, in the year 1850, with its lowest extreme of 20°, the absolute range was 59°; in 1851, the range was 54°; and in 1852, it was 53°. Thus it would not give an accurate estimate of this subject to judge by so small a period as three years.

The daily range of temperature in the several months, for the twenty-four hours, gives for January the maximum variation of 21°, and the minimum of 7°; for February, 19° and 4°; for March, 20° and 5°; for April, 26° and 7°; May, 27° and 12°; June, 22° and 11°; July, 23° and 8°; August, 20° and 10°; September, 22° and 8°; October, 19° and 6°; November, 23° and 6°; and December, 18° and 6°.

The general appearance of a country is to be received as evidence of its climate, and the effects of the open air on *vegetation*, especially on that of the less hardy species of plants, allow us to form probable conclusions as to its influence on animal life and comfort. The aspect of our fields and gardens testifies amply to the mildness of the climate of the south of Ireland. If our fields are less luxuriant in summer than in less equable climates, they are in winter clothed with a perpetual green. The myrtle thrives in the open air with us almost as freely as in Portugal; though we are told by Meyen[a], "that it perishes when so exposed in Berlin," which is nearly in the same latitude as Cork. The moisture of our climate, and the constant presence of clouds, prevent the atmosphere from being so much heated in the day, and cooled in the night, as in the drier and more transparent air of inland countries, thus affording a more equable temperature. It must, however, be remembered, that the physiognomy of a country depends not merely on conditions of climate, such as winds, heat, moisture, and the like, but on artificial culture; and the higher degree of cultivation usual in the neighbourhood of larger cities, if not allowed for, might mislead us. We have surer data to proceed on in the bloom of our gardens, and the number and nature of our indigenous plants. It is rare, indeed, to find a winter so severe with us as not to pro-

[a] Geography of Plants, by F. J. Meyen, M. D., Professor of Botany in the University of Berlin. Ray Society, p. 13.

vide a bouquet for the florist; and one of our local celebrities[a] presented the Cork Cuvierian Society with a December wreath of forty-seven flowers, culled from his parterre, grown, with little protection, in the open air, and many of them regarded as tender plants in the parts of Ireland north of Munster. With respect to our indigenous botany, I refer, with much pleasure, to the Flora of Cork, published by Dr. Power[b]. According to his catalogue, the number of plants in the county of Cork amounts to 1820; of which 885 are phænogamic, and 935 cryptogamic. This list has been much extended since its publication in 1845, and patient research would doubtless extend it still more. It is still below the number found in higher latitudes, Denmark having 1034 phænogamous, and 2300 cryptogamic plants[c]. The great majority of our plants are to be found in a radius of a few miles from this city. The Nymphæa adorns the still waters of the far-famed Blarney lake, with its spreading leaves and beautiful white flowers just rising above the level of the water. The *Pinguicola grandiflora* is found near the city. The *Trichomanes speciosum*, the elegant Bristle fern, has been met along the Lee, that classic ground of the botanist. Among the "plantæ rariores" may be mentioned, the *Medicago maculata*, *Trifolium arvense*, *Dianthus deltoides*, &c.; but it would occupy us too much to give any further illustrations.

Any thorough inquiry into the *sanitary state* of Cork should embrace a number of considerations. We must premise that this city was formerly the great depôt of the navy provision trade, and though something is still done in this line, the adversity with which the whole country has been overwhelmed, and the many rivals which free trade has encouraged, have rendered it no longer her staple export. In the north outlets of the city were situated the abattoirs, and the ill consequences to health resulting from these slaughter-houses have been often deprecated. The lanes and alleys along the old Blarney road were and are still the depositories of the offal in every stage of putrefaction, and the hand of reform is yet unraised to abate this Augean nuisance. Hence, though this suburb is delightfully situated for health and enjoyment, it is disgraced by every species of contamination; and whatever progress the rest of the city may have made, this portion continues—as it was described by Dr. Rogers in 1720—uncleansed, and by conse-

[a] Botanical Illustrations of Climate, a paper read before the Cork Cuvierian Society, by Alderman Dowden.

[b] Fauna and Flora of the County of Cork, by Drs. Harvey and Power, and Mr. John Humphreys.

[c] Meyen, p. 3.

quence unhealthy. In every epidemic we find it severely visited, and in the late fatal epidemic fever it supplied the hospitals with most of their patients.

Another impediment to the progress of sanitary measures arises from the influx of peasants from the rural districts resorting to the city for relief, or for emigration. The latter class of persons coming to Cork for embarkation, and having little surplus money, flock into the cheap lodging-houses, already centres of contagious disease, and thus spread the evil. No limit can satisfy the cupidity of the owners of these miserable abodes; some of them are cellars, with no possible ventilation, while in others, more favourably circumstanced, the crowding together of numbers in a space vastly disproportioned produces like dangerous effects to health. Hence these houses have been long notorious as dens of moral and physical disease, and the public voice has often called, but with little effect, for a remedy. Whether the new Lodging-house Act will meet the evil remains to be proved.

Another cause, promoting an insalubrious state of the city, is found in the intra-urban interments. The graveyards of the churches are of very limited space, and, being nearly all situated in the centre of poor and populous parts of the city, they cannot but exercise an injurious influence. One of the chief medical establishments of the city, the North Infirmary, is built on the skirts of a graveyard, and, independently of the depressing effects naturally arising from the associations of such a place in the imaginations of the sick, a still greater evil arises from the malarious influence resulting from the continual dredging up the unctuous soil for fresh interments. This was found so great a nuisance during the late fever epidemic, that the General Board of Health had to command the graveyard to be closed against new burials. It is to be regretted that the vested rights of individuals, and the want, though urgent, of a suitable cemetery without the city, prevent the redress of this grievance.

In one essential article of health, *good water*, a great advance has been made of late years. The waters of the Lee, brackish from the tide, were formerly in use among the poor, and caused various abdominal diseases. Public fountains have been lately constructed in all the populous districts, affording a sufficient supply. The water used by the more affluent citizens is particularly free from impurity. An analysis of the pipe-water made by Professor Davy, of the Royal Dublin Society, yielded only 7·20 grains of solid matter in the imperial gallon, being in the proportion of $\frac{1}{9743}$ to the whole, chiefly

consisting of the carbonates of lime and iron, but in quantity so small as not to interfere with common use. When we compare this amount with the quantity of solid matter in the water supplied to London, the purest of which contains $13\frac{1}{2}$ grains, or double the amount, we have reason to be content with our local superiority in this important auxiliary to health.

Before speaking of the *endemic diseases* of Cork, we may say a few words on the epidemics which have, from time to time, visited the city. A general history of epidemics is still a desideratum in medical literature; but the recent establishment of the Epidemiological Society of London promises to do much in this wide field. It is probable that, in the writings of the old annalists, such contagious maladies as were rapid and deadly in their effects were called "plagues," otherwise we must suppose our western isles to be more frequently visited by oriental pestilences than is at all probable. The earliest of these epochs is the year 548[a], when we are told that "Munster was afflicted with a great plague." Whether this was the terrible pestilence which depopulated the earth in the reign of Justinian, A. D. 542, lasting for fifty-two years, and so graphically described by Gibbon[b], we cannot say. The years 664 and 685 witnessed also fatal plagues. Recurrences of these pestilences are chronicled as occurring in 1348, 1361, 1370, and 1383. These dates correspond with the four great epidemics of the "Black Death," that terrible pestilence of the fourteenth century, which desolated the known world. "Ireland," says Hecker, "was much less heavily visited than England"[c]. The next epidemic pestilence noticed in our annals occurred in 1504, but whether this was the petechial fever which then, for the first time, began to attract notice in Spain and Italy, it is difficult to say. In 1528 we find it recorded that "a malignant disease, called the sweating sickness, raged in Cork"[d]. We may take the opportunity here of correcting an error into which Hecker falls, in stating that this hidrotic disease "did not extend westward to Ireland"[e]. In the British Isles, he observes, neither Irish nor Scotch suffered; and he endeavours to explain it by some peculiarity in the English constitution, or "their gluttony and rude mode of life"[f]! He concludes hastily that historians are silent about the extension of so calamitous an event to Ireland.

[a] Bede, Hist. Eccles., lib. ii. cap. xxvii.
[b] Decline and Fall of the Roman Empire, chap. xliii.
[c] Hecker's Epidemics of the Middle Ages. Sydenham Society Ed., p. 27.
[d] Vide Smith's Cork, vol. ii. p. 35.
[e] Hecker's Epidemics of the Middle Ages. Sydenham Society Ed., p. 247.
[f] Ibid. page 294.

In the years 1535, 1547, and 1607, dreadful visitations of pestilences are recorded, of the nature of which we can form no idea. In 1650 plague is again noted, probably the epidemic dysentery, so fatal during Cromwell's visit to Ireland. From this to 1708 we have no account of any epidemic; but the last date, and that of 1718, are assigned by Dr. Rogers, in his work on the Diseases of Cork, as remarkable for typhus fever and malignant dysentery. The same author cites 1731 as a fatal year from small-pox, and 1740–41 from fever and dysentery. The years 1762 and 1782 were notable for a wide-spread and fatal epidemic of influenza. The last year of the past century was a famine year, and the present century opened disastrously with famine, and its not uncommon sequela, typhus fever. Over 4000 persons, writes Dr. Milner Barry[a], were attacked in Cork, of the poor; so that, in 1802, it was judged necessary to open a district fever hospital in the city.

In 1803 another very severe outbreak of influenza occurred, and in 1810 contagious fever became again general; great destitution existing among the poor. This returned, in 1814, in a mitigated form; but a scanty harvest occurring in 1816, typhus broke out the following year, and over 8000 cases of it were met with in Cork and its vicinity[b]. This epidemic prevailed all over Ireland, and also in Great Britain; and in 1818, a Bill passed the Legislature to establish Fever Hospitals in Ireland. In 1822 and 1826 a return of fever took place in Cork, as well as other parts of Ireland, and has been described by the able pen of Dr. Graves[c]. In 1832 a new pestilence visited us in the form of that fearful epidemic, the Asiatic cholera, in its slow but certain progress through the world. In 1837, one of the most fatal and universal epidemics of influenza within our memories, occurred, followed the next year by an outburst of fever. In 1841 and 1842 a violent epizootic swept off thousands of cattle; and in 1846 and 1847 occurred that fatal period in our history, when, to the miseries of want and despair, from the failure of the potato crop, were added the ravages of a widely diffused and mortal epidemic of typhus fever. In March, 1849, we were again visited by the cholera, but since this period our country shows some sign of recovery from her almost exhausted vitality, and general health and public prosperity seem settling on a more stable foundation.

[a] Report of Cork Fever Hospital, in the Edinburgh Medical and Surgical Journal, vol. xiv. p. 117.

[b] Practical Observations on Typhus Fever, by A. Callanan, M.D.

[c] See his Clinical Lectures, edited by Neligan, vol. i. Lecture vii. The Irish School of Medicine has, alas! to deplore the recent loss of this accomplished physician, one of its brightest luminaries. "Quando ullum inveniet parem?"

Such is a succinct account of the chief epidemics occurring in the city of Cork from the earliest record to the present time; and there are few countries in the world where these terrible national scourges commit such havoc as in ours, from the improvident recklessness of the people. The celebrated historian, Niebuhr, has alluded, with his usual acumen, to the singular influence which fatal epidemics exercise over the character of nations, whole periods of history being explained by their appearance or disappearance. All great epochs of moral degradation are connected, according to him, with great epidemics. In the succeeding generation everything perishes, and barbarism returns. His observations have much truth, for when men get reckless of life they care little for the means of preserving it; and when, on the other hand, the fear of death absorbs all the thoughts, the framework of society is broken. To trace the effects of these epidemics in our own countrymen would afford a painful interest. Ireland, in the late epidemic, seemed like some "city of the plague" in the middle ages,—terror was in every breast, the dark robe of mourning was seen in every family, and country districts, once populous, now appalled the heart by their loneliness. Hordes of human beings, enfeebled by sickness and attenuated by want, rushed into cities for an asylum, meeting their fate with a resignation like the apathy of despair.

Of *endemic diseases* we may begin with fever, as always lurking in this city, liable to be drawn out on any violation of the laws regulating health. It would almost appear that the Irish constitution has a greater affinity for fever than that of other nations, as no sanitary measures can wholly extinguish this disease, which smoulders on until some spark kindles it into a flame. It follows the Irish labourer even to other countries, and Glasgow and Liverpool trace their fevers to the quarters of the Irish, and cast on them the stigma of originating the disease. It must be admitted that most of the stimuli which quicken the seeds of fever exist among the lower classes of Irish,—deficient and bad food, intemperate habits, neglect of personal cleanliness, and *the effluvia accumulated from numbers herding together, like gregarious animals, in ill-ventilated dwellings.* These hurtful habits the Irishman does not leave behind him when he emigrates. The evil effects of over-crowding were fatally evident from the pressure on the different workhouses during the famine, showing that, of all the auxiliaries to health, pure air is that which can be least neglected with impunity. It is to be feared that, unless due precautions be taken, the practice which prevails in this city and elsewhere, of congre-

gating hundreds of young females in industrial establishments, where confined space and a not healthy occupation, are combined, will lead to evils which are likely to lessen the utility of these institutions.

Among diseases which appear to travel in cycles, *intermittent fever* may be included. It was, as might be expected from the marshy nature of the district about Cork, at one time one of our most common affections, and "the fever and ague" were as familiar words in this city as in the swamps of the Mississipi. It is curious that, without any obvious cause, this disease, for a number of years, totally disappeared among us, so that during my connexion with the North Infirmary, as physician, the only instances I witnessed, for more than ten years, occurred among sailors coming to this port in corn vessels from Galatz, and other places along the Danube; and some of our medical pupils passed their noviciate without witnessing a case of the disease. The first indications of its return were seen in March, 1850; but the persons attacked were from particular localities. It continued till July and August, when it disappeared until the March of the following year. Males were much more frequently affected than females. No age escaped, from the infant at the breast to the threescore and ten, but chiefly it seized on persons in the prime of life Some of the cases came from the high and dry grounds and the sandstone formations, such as the Fair Hill, others from the humid soil and limestone of Evergreen and Blackrock.

Many of the lanes in the suburbs had it, and persons residing along the river quays did not escape, though it was capricious in its selections. In the Cork Union Workhouse, situated near a bog, a number of cases occurred, and the districts of Killeen, Whitechurch, and Ballincollig, were largely attacked. The type was chiefly tertian; some cases of quotidian were met; quartan was rare. It was very amenable to quina; but, unless the remedy was long continued, the disease relapsed.

Another disease, once frequent in Cork, then disappearing almost totally, and lately returning with great severity, is *dysentery.* In our annals dysentery held the second place for fatality among the "*leaguer sicknesses*" of Ireland. In 1796 it committed great ravages in the ranks of the Irish Brigade quartered in Cork; it was an autumnal disease, and followed generally in the wake of fever. It continued for a few years after; but the next account of it, as an epidemic, is to be found in Dr. Cheyne's valuable paper in the Dublin Hospital Reports[a].

[a] Dublin Hospital Reports, vol. iii., p. 11.

According to the late Dr. Milner Barry, of this city, it occurred among the poor chiefly after a wet summer, and carried off one in every three attacked. It was supposed by Dr. Barry to have been caused by bad water; and he states that in the old Cork Barracks the troops had been supplied with brackish water from the Lee, and were attacked with dysentery, but Surgeon Bell had a supply of pure spring water brought to the Barracks, which caused the disease to disappear. The decline of dysentery in Cork was, perhaps, too hastily concluded by Dr. Barry to be due to the erection of public fountains, and a better supply of good water. It certainly so far declined, that for a number of years it had scarcely an existence in the city. In a statistical report of the diseases admitted into the North Infirmary, during five years from 1838 to 1843, which I drew up for the Medical Section of the British Association, at its Cork meeting, I found that but seven cases of this disease had been received into the hospital[a]. But the potato failure, in 1846 and 1847, brought back the disease in all its virulence, and in a highly contagious form, being united with continued fever. Since the cessation of the epidemic, dysentery has remained in this city as an endemic, though, as we have seen, the want of good water is no longer a cause. The dietary of workhouses has certainly a tendency to promote the disease, and it is one of the chief causes of death in these institutions, chiefly among the very young, and the aged and infirm. Of 1101 deaths which occurred in the Cork Union Workhouse, from February, 1852, to February, 1853, 131, or one-ninth, were caused by dysentery, besides those cases where it complicated and hastened the issue of other diseases. But it would be wrong to conclude, that all these persons were first attacked while in the workhouse; a great number were brought in from the electoral districts in a hopeless state. The change of diet has been too sudden and too absolute for the poor; they do not understand the mode of preparing the Indian meal for food, and have not the means of cooking it properly. Besides, they are obliged to use an article of inferior quality.

Another disease resuscitated after the potato failure was *scurvy*. This disease of higher latitudes had become almost unknown until the year 1847; the only cases in our hospitals being of sea scurvy among sailors, chiefly of guano vessels, the continued exposure to the vapour of ammonia in these ships appearing to act as a determining cause. We could assign no obvious cause for the epidemic of land scurvy; in some the

[a] Report of the British Association for the Advancement of Science, for 1843, p. 84.

excessive use of tea or coffee was assigned by them, but this is no rare abuse. It prevailed very much in the workhouse, and attacked females more than males,—individuals, moreover, frequently in the prime of life and strength. The gums were generally first affected, and then stiffness of the joints came on, and pains of the legs, and the symptoms declined in the same order. This disease has been so well described by the late Dr. Curran, in this Journal[a], that I have nothing to add to his observations. The epidemic passed away as suddenly as it came, and has not since returned.

Diseases of the chest hold a prominent place in our catalogue, as they do in other parts of Ireland. Of these, bronchitis senilis and phthisis are the most important. The results of hospital experience afford ample proof that the latter of these diseases is not constant in its prevalence, but of an intercurrent character, long periods sometimes occurring which are comparatively free from it. Our cases of very acute phthisis are rare, the disease seeming very much prolonged with us, especially among the higher classes, who can guard against undue exposure to weather. Of the 1101 deaths from all diseases in the workhouse, during the past year, 57 were from consumption.

The *diseases peculiar to workhouses* would form an interesting inquiry. In every epidemic the first cases usually occur there, so that the physicians of these institutions can see before others the coming storm. Some diseases may be called indigenous,—such is that fruitful cause of death which is called in workhouses the *house-decline*,—a kind of cachexia nosocomiensis,—in which the patient, chiefly a child, droops day by day, with no pain, no expression of regret or repining, and but little evident disease. Another of these diseases is *purulent ophthalmia*, which commits terrible havoc among all ages, but chiefly the young, running its course with great rapidity. It is a disease of the end of spring and the summer, and seems more closely connected with foul air in heated wards than with other causes, —ablutions with impure water also help to produce it. In some cases it could be traced to lime rubbed to the eyes, or the juice of the *euphorbia helioscopia* dropped into them, by children who did not wish to be sent to an auxiliary workhouse away from their mothers.

Of *diseases rarely met with* in Cork may be mentioned calculus of the urinary bladder. Very few cases of this disease present themselves at the hospitals, though the operations which have taken place have been very successful. Bronchocele

[a] Dublin Quarterly Journal, N. S, vol. iv. p. 83.

is another unfrequent disease, considering the marshy nature of the country. Colica pictorum is a disease almost unknown. I recollect of but one case of wrist-drop from this cause. Delirium tremens has declined with us of late years, though the enthusiasm of the advocates of total abstinence has abated. It has been observed, that when temperance societies are in full operation outbreaks of this disease are met, which are unusual at ordinary times. The drunkard then throws off all shame, and drinks deep rather than taste not. The chief advantage of these societies seems to be, that they have struck at that monstrous evil which prevailed formerly among all classes of society in Ireland, which made drinking to excess a popular and venial indulgence. It is a remarkable trait of the Irish character that, under the late pressing evils of destitution and sickness, *suicide* has been so rare. The unhappy outcast has lain down in the streets or fields to die, perfectly resigned to his fate, but never seeking to hasten it. The sense of injury, much more than the feeling of privation, hurries on the Irish peasant to commit crimes; and to take away the life of another is but a light matter compared with the act of shortening his own. They have truly little thought for the morrow; hope is rarely extinct, and their agricultural habits and feelings of religion keep them from yielding to sudden acts of despair.

I have to say, in conclusion, that in reviewing this paper I am sensible of many omissions and defects which I cannot now rectify. I have in the Tables followed the mode adopted by Sir James Clarke, in his excellent work on Climate. I have endeavoured to do, upon a small scale, for the city of Cork, what Dr. Scott has so ably done for Queenstown[a]. The results only of long and troublesome Tables have been given, as the calculations would be tiresome. Their accuracy, however, can be depended on. Any person who has made similar calculations well knows the exhausting trouble attendant on them, and will, I feel certain, make allowance for many deficiencies.

Art. XI.—*On Prolapsus of the Uterus and Vagina during Pregnancy and Labour*[b]. By J. H. Houghton, M. R. C. S. E., Surgeon to the Dispensary, Dudley.

It will be conceded that, as a general rule, "extraordinary cases are usually more curious and interesting than in-

[a] Dublin Journal of Medical Science, O. S., vol. xiii., p. 55.

[b] Read before the Birmingham Medico-Chirurgical Society, March 1st, 1853.

structive and important, and therefore, while it may be an agreeable occupation to relate the former, it becomes an imperative duty to record the latter; amongst which I think the following case of prolapsus of the uterus and vagina, with extreme rigidity of the os uteri during the whole of pregnancy and labour, may justly be classed. So few cases have been recorded, and fortunately so few happen, that, considering the dangers and difficulties we have to encounter when they do occur, any information on the subject must be considered important.

Mrs. S.[a], aged about 26, was taken in labour with her second child, on the 13th November, 1851, at 4 P. M. The pains continued feeble and infrequent till 2 P. M. on the following day, and I saw her at about 4. The head presented naturally; the os uteri was dilated to the size of a crown-piece; the passages were moist; and the membranes had been ruptured about twenty-four hours previously. However, on examining more carefully, I found that the os uteri was close to the outlet; that the walls of the uterus, from the margin of the os to that part of the uterus against which the head of the child pressed, formed a cone about three inches long, the apex downwards, as though the neck of the uterus had dilated simultaneously instead of becoming obliterated before the dilatation of the os commenced. The lips of the os were exceedingly thick, rigid, and unyielding, and indeed the whole of the cone above described presented the same unyielding character. The pains were regular and tolerably strong. As the labour proceeded, the whole mass, uterus and head, came down together, dragging with it the anterior wall of the vagina, and at length obliterating the anterior *cul de sac* of the vagina; and the considerable tumour thus formed dilated the vulva. The descent continuing, and the dilatation of the os uteri hardly progressing at all, the uterus came so low down that the anterior lip of the os uteri was pushed outside the vulva, and the anterior half of the os uteri, and the posterior half of the vaginal orifice together, formed an elliptical opening, through which the head of the child could be readily felt, and if necessary could have been seen. Still the os uteri continued firm, hard, and unyielding, and eventually the whole of the os, with an extraordinary caput succedaneum, protruded from the vagina. Still the rigidity continued, and I began to lose all hope of the dilatation being effected by natural means.

The above is a pretty fair account of what took place until

[a] Mrs. S.'s mother is the subject of prolapsus, which came on only after the birth of her last (ninth) child.

about 8 o'clock P. M., and then things were much in the state described. The patient being a pale, delicate, little woman, venesection was not performed, but tartar emetic, in nauseating doses, was given, and nausea was kept up for about three hours. After this, two scruples of laudanum were administered.

At this time the condition of the patient was much as follows:—Os uteri rather larger than a five-shilling piece; caput succedaneum protruding through the os; bones of the head pressing on the margin of the os, which was thick, hard, and very unyielding. Pains strong. Anterior *cul de sac* of vagina obliterated with each pain, and a disposition for the whole os uteri to pass externally at every pain. For sometime after the laudanum was given the pains became more moderate, but they never ceased, and at about 10 o'clock they returned sharply; the os, if anything, showing more disposition to dilate, though still very firm, hard, and rigid; and I had serious fears that incision of the os uteri would become necessary.

All things considered, I determined to wait and see if the faint hope of dilatation, which seemed to present itself, would be realized, and, whilst waiting, to continue the same course of treatment which I had hitherto adopted, and which consisted in preventing the total inversion of the vagina, and entire protrusion of the head of the child and uterus *en masse* during each pain, this accident threatening with each contraction of the uterus, indeed once happening to a considerable extent when I had been late in watching a pain. To effect my purpose I proceeded in the following manner:—Having replaced the uterus and vagina as well as I could, I watched carefully for each pain, and when it was about to commence I passed the fingers of my right hand into the anterior *cul de sac* of the vagina, and the thumb of the same hand into the posterior *cul de sac;* my fingers and thumb thus embraced the os uteri and child's head, and whilst it allowed the latter to press against and dilate the former, I supported the whole mass in its proper position, or nearly so; and thus, as I conceived, imitated nature to the best of my ability by keeping the uterus artificially suspended in the cavity of the pelvis, and maintaining a point of support to the uterus, to allow of the pressure of the child's head upon the os, and hence its further dilatation. For some time the dilatation continued very slowly, and I could feel, from time to time, that some abrasion of the anterior and posterior lips of the os had taken place. The os now very tightly embraced the head, the posterior lip being

softish, the anterior very hard and thick. At about half-past 11 o'clock, during a very strong pain, and whilst I was pursuing the same plan, I felt something suddenly give way, and the child was almost immediately born alive; in fact laceration of the posterior lip of the os uteri had taken place to, I suppose, an inch in extent. No flooding followed, and the placenta came away without any difficulty; except that with it down came the uterus and vagina. The laceration was then distinctly seen, and the whole of the os uteri swollen and tumid; this was easily returned; the patient was, as might be expected, much exhausted; a stimulant and dose of opium were given, and she was allowed to rest[a].

November 16th. A good deal exhausted and very sore. Countenance good; tongue moist; pulse 80, soft; no fever. Passed her water twice, and had two motions; no swelling or tenderness in the abdomen; she is in good spirits; she sat up when her bowels were relieved; the uterus then came down and remains down now; the laceration and the abrasions on the anterior lip can be seen. I returned the uterus, and desired that it might be returned as often as it came down, and supported by a perineal bandage, first, however, fomenting it well.

17th. Some diarrhœa and pain in the uterus, but no distention or general hardness of the abdomen; for this, a poultice; and some grey powder, with Dover's powder, was given; and under this treatment these symptoms gradually subsided.

On the 27th, "the pain and tenderness in the abdomen have quite subsided, and her health is much improved." To-day she told me that she was much neglected in her first confinement, and has had prolapsus ever since. About a year since she had retroversion of the uterus, followed by a miscarriage at the fourth month; since this time her uterus has descended daily, and has *prolapsed every day during her pregnancy, even to the day of her delivery, when it had been down to a considerable extent, forming a large tumour externally.* At times she has had considerable discharge from it, and was aware of ulceration existing round the os. It has frequently been down as large as her two fists; and although she has been a great sufferer during her pregnancy, she has not consulted any medical man about it, but allowed it to progress without interference.

[a] It may be asked, why was chloroform omitted? and why were incisions not practised before? In reply to both these questions I must say, that the case occurred at some distance in the country, and circumstances so happened that I was unable to get any professional assistance. I was unwilling to trust the administration of chloroform to a non-professional person, or to incise the os uteri without the sanction of a brother practitioner.

On the 29th of November she had a severe rigor, followed by well-marked symptoms of inflammation of the pelvic fascia, threatening suppuration; this, however, was averted. On Christmas Day she sat up for the first time, her health being good, and her spirits excellent. The prolapsus returns whenever she sits up, but the uterus is easily restored to its proper place when she lies down. The patient continues to suffer from prolapsus in an extreme degree, and the best devised means I have been able to suggest have failed to support the uterus in its proper place. Her health now (February 24) is good, but she suffers much from the irritation the prolapsed organ causes.

We may congratulate ourselves that cases similar to the one I have just related are of rare occurrence; and, so far as I am able to ascertain[a] very few have been recorded. I am indebted principally to Dr. Merriman and Dr. D. Davis for the information I have been able to glean on the subject. The former, in a short paper published in the Medical Times, gives some account of six cases which he had collected from various sources. The first is from the practice of Professor Rizzoli; but the Professor's account seems so meagre, as to render it almost useless.

The second case occurred in 1776, and is extracted from the Memoirs of the Medical Society of London. In this case it appears, that the protruded mass was wedged in the passage; for we are told that, "when mortification appeared imminent, the perineum was found dilatable: it was dilated, and the mass slipped back; subsequently pains came on, and the child was born by the natural efforts." The patient did well.

The third case occurred in 1763, in the practice of Mr. Antrobus, of Liverpool: "She went her full time, though the cervix became scirrhous from exposure. At the time of labour the first pains drew up the uterus; but, the waters breaking, it was again propelled down before the head of the child. Counter-pressure was therefore made, and the part lubricated. The child was born, and the uterus replaced." She did well.

The fourth was by Mauriceau: "The uterus had protruded, during labour, to the extent of half a foot, and was as big again as the head of a child. The os looked like a phymosis, of which the lips were three fingers' breadth thick, and quite livid. He introduced his hand by degrees into the uterus, and thus guided the head to its exit."

The fifth, by Portal, in a first pregnancy. There was pro-

[a] Systematic treatises on midwifery including those of Blundel, Burns, Denman, Dewes, Rigby, Ramsbotham, &c., are silent on the subject, and so are most authors on the diseases of women, including Sir C. Clarke, Bennett, Gooch, Ingleby, &c.

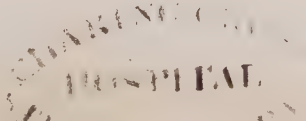
trusion when the orifice was only half a line across. He introduced first a silver sound, then a finger, and so dilated the uterus still more. After three hours of dilatation, the os was the size of a silver crown. An hour's cessation now took place, after which dilatation was resumed, by both hands being carefully insinuated, the bag of the waters assisted, and two pains brought the child into the world. The uterus was replaced, and she did well. She had a relaxation previous to marriage, which she could easily replace. During her pregnancy it ceased.

The sixth is from Smithe. In this case the os was pushed beyond the os externum by the pains. "During every pain," he says, "I kept up the child's head and the mouth of the womb, which I gradually dilated with my finger, till, being fully opened, it easily slipped up all round the head, and this, by degrees gradually opening the os externum, was safely delivered."

The seventh is by Mr. Gristock. A delicate woman was seized in labour with her third child; she had suffered from procidentia, and sometimes prolapsus, since her last pregnancy; the protrusion became greater in the third pregnancy; but, as it advanced, it gradually passed up. As labour came near, she soon became sensible of much weakness and bearing down; and at length, when her pains actually came on, she was much alarmed by finding a large fleshy mass had passed through the os externum, with a good deal of fluid discharge. Mr. Gristock was now sent for. He found the os uteri and a considerable part of the vagina protruded beyond the os externum. He placed her in bed, had her well fomented, and called a consultation. No dangerous symptoms presenting, it was determined to wait; when the pains became strong, it was thought advisable to expand the hand over the protruded part, so as to make the ends of the fingers afford five points of support to the prolapsed vagina. By degrees it appeared to recede during the pains; and at last, during a strong pain, the whole mass slipped up into the pelvic cavity; the child was speedily born; the placenta came away; the uterus contracted firmly, remaining in its proper situation. She was twice afterwards delivered by Dr. Hugh Ley under the same circumstances.

Dr. David Davies, in his Principles and Practice of Obstetric Medicine, gives the following cases.

1. A woman, thirty-two years of age, pregnant with her fourth child, was attacked at the full period of gestation with pains similar to labour pains. Her midwife intimated that



her delivery was near at hand. Three days elapsed, and no delivery took place. On a sudden, however, a prodigious exertion of the parturient power was made, and in a moment the whole gravid uterus with its contents presented itself bodily at the outside of the vulva. A consultation of physicians and surgeons was forthwith called. The midwife stated that the patient had strong pains for the entire period of three days: that, during the latter part of the time, they had indeed been exceedingly tempestuous, and that the intervals between them had rarely exceeded a quarter of an hour. She further stated that, during the force of the pains, the neck, as well as the parietes of the womb, remained as flaccid as during the absence of the pains, but that the womb sank gradually more and more towards the inferior aperture, as it seemed to obey the impulse of each contraction; the uterus was in a state of inflammation. Its orifice was scarcely sufficiently dilated to admit of the introduction of a finger. The fœtus, whose epidermis peeled off upon friction, appeared to have been dead about twenty-four or thirty hours. The woman died four hours after the accident[a].

2. A middle-aged woman had gone about ten weeks when she was attacked with prolapsus uteri. The uterus was pushed entirely out of the vagina, and presented at the external orifice of the size of a man's fist. It was returned, and a pessary used till it was forced out by regular labour pains. The child was delivered, but it was of small size. The mother recovered[b].

3. Dr. Davies' third case is taken from Haller's Chirurgical Disputations. In this case the procidentia was treated by delivery before any attempt was made at reduction. The intention of the entire paper (Dr. Davies observes) is to prove that delivery is much more easily accomplished in the prolapsed state of the uterus than after its reduction. This point is illustrated by the case of a woman, aged 30, who suffered from procidentia for two months, after which she was safely delivered. The uterus was then reduced, and afterwards retained by a pessary.

4. In the fourth case the uterus had fallen without the os externum, in consequence of some unusual pains in the abdomen. As it could not be reduced, fomentations were diligently employed. Parturient pains supervening, and the membranes remaining entire, the hand was introduced into the womb, and the child was turned, and both mother and child were saved. The secundines adhered, but were subsequently extracted. Fo-

[a] Corvisart's Journal, tom. iv. p. 264. [b] Smith's Cases.

mentations were again employed, and the uterus was reduced. The woman perfectly recovered.

5. A woman, who had been subject to prolapsus during gestation, experienced a repetition of it in consequence of bearing down too severely during her subsequent labour. The protruded uterus was about the size of a man's head. The midwife, not knowing how to act, requested the help of two professional gentlemen, who, in their turn, summoned a more extended consultation. The result was, that delivery was effected by section of the orifice and part of the neck of the uterus. A sound but dead child was extracted. Fomentations were applied, and the uterus reduced, and subsequently retained in its proper place by a pessary.

6. The last case was one by Hanerwolf: "The orifice of the uterus being partially dilated, the patient herself dilated it still more, the midwife assisting her, and the birth of the child was effected in this state of the womb. The uterus, after being washed and fomented, was returned and retained *in sitû* without the use of a pessary."

Two cases also are mentioned by Ashwell,—one, of a woman at Greenwich, an out-patient at Guy's, who told him that during the whole time of her last pregnancy the womb was external, and that the child was born whilst the womb was without the vulva. The woman afterwards suffered from irreducible prolapsus.

The second case is from Capuron[a]. A peasant girl, aged 14, made a violent effort during menstruation, which precipitated the womb externally; it was not reduced, and she insensibly became accustomed to its inconvenience. At twenty-two years of age she married. She enjoyed excellent health until aged 40, but was childless at that period; however, "un jour son mari, dilata l'orifice uterine y introduit le gland et determina la conception." When labour commenced, the pains were regular, but insufficient to expel the fœtus, especially as the neck of the womb, its mouth, and sides, had acquired a cartilaginous hardness. A double incision was made to enlarge it; the labour terminated favourably; a full-grown dead infant was born, and at the end of two months the woman had perfectly recovered.

From a review of the fourteen cases above detailed we find:—

That two cases were primiparæ; four, multiparæ; in eight, the number of pregnancy was not named.

[a] Maladies des Femmes.

That in two cases the head presented; in twelve, the presentation was not named.

That in four cases there was great rigidity of the os; in ten, the state of the os was not mentioned.

That in thirteen the prolapsus was complete; in one, this was not mentioned.

That in one case venesection, tartar emetic, opium, remedies calculated to overcome rigidity, were used without benefit; in four, counter-pressure was used; in four, dilatation; in four, the mode of proceeding does not seem clearly related; in two, incisions were practised; in one, turning.

In twelve cases the patients recovered, I presume with prolapsus uteri remaining; in one, death occurred; in one, recovery without prolapsus.

Rupture of the cervix uteri took place in one case.

The most striking fact arising from the above summary is, that out of fourteen patients who suffered from so serious an accident as prolapsus uteri during labour, thirteen recovered. Hence in these cases we have much to hope for, however serious they may seem at first.

It does not appear that the evidence before us supplies materials for deciding upon the best mode of treatment in these cases, for opinion seems to have been pretty much divided amongst the persons who conducted the cases recorded,—for four used counter-pressure; four, dilatation; four did not record their proceeding; two practised incision; one, turning. But the accounts of most of them are so meagre that we cannot attach much importance to them as guides to practice.

Counter-pressure, dilatation, and incision, are the modes of treatment which were most practised, and which seem most naturally to present themselves to the mind as the means best calculated to meet the difficulties we have to contend with, and on each of these a word may be said.

Counter-pressure, and by this I mean supporting the uterus *in sitû*, seems to be applicable in all cases of prolapsus during labour. It was used in four of the cases reported,—indeed, on seeing a case this mode of treatment at once suggests itself, (at least it did so to me and to three other observers, though I had never before witnessed such a case, or contemplated the possibility of one occurring). For, on seeing the uterus and vagina protruded, and reflecting how the uterus is naturally suspended in the pelvis, it follows almost as a corollary to the mind, that by supporting the vagina by means of the points of the fingers, and thus maintaining its proper *cul de sac*, a point is afforded for the uterus to act from, from which the head of

the child or the membranes, if entire, may press upon the os, and thus facilitate dilatation.

Some of these cases, however, are attended with extreme rigidity, and spontaneous dilatation may not be so easily effected, and then mechanical dilatation or incision must be decided upon.

Mechanical dilatation was performed in four of the cases,—but these four cases all occurred when mechanical views of parturition were prevalent, and long before the physiology of labour was understood. Independently of any injury which might be done to the os uteri by the act of dilatation, I think that upon physiological grounds there are strong objections to it,—for if the views promulgated by Dr. Tyler Smith be correct, and of their general truth I feel no doubt, then by the act of dilatation we should be running great risk of producing violent uterine action, by stimulating the reflex function of the uterus, and thus probably induce the greatest danger we have to fear,—viz. violent pains and laceration of the cervix or body of the uterus. Hence I should not be disposed to try dilatation were another case to come under my observation.

Incision of the cervix was practised in two cases, and both did well. During the last few years a good deal of discussion has taken place on the propriety of incising the cervix in cases of extreme rigidity of the os uteri, and names of high repute are ranked amongst its advocates—Murphy, Lever, Tyler Smith, Kennedy, &c.

Dr. Murphy observes: "After all, in making incisions we are only imitating nature, who, in her own way, often incises the cervix,—you cannot go wrong in following her example, and therefore, when you meet with these very embarrassing cases (simple rigidity), I feel justified in recommending you to incisè the cervix;" and Dr. Lever considers that "the operation is free from danger or pain, or fear of hemorrhage." Dr. Smith also recommends it in extreme cases of rigidity.

Dr. Ramsbotham, in the last edition of his work, whilst arguing generally against the practice, and looking upon it in a much more serious light than Dr. Lever seems to do, would still allow it, but "only with extreme caution in unmanageable cases, and then not till all other means of procuring dilatation had failed."

But if there can be an extreme case, I conceive that such a one as that I have recorded must be ranked amongst the number; and remembering the imminence of the danger, the anxiety it creates, and the probable result of waiting too long, —laceration or rupture,—I am disposed to think that, after well

weighing all the facts and the authorities I have been able to consult, if another case should occur to me, I would try counter-pressure for a time, and if then the rigidity continued in spite of the ordinary means of overcoming it, I would incise the os; and I am the more disposed to this conclusion by remembering the admitted uncertainty of all the means which have hitherto been devised for overcoming rigidity of the os uteri.

Art. XII.—*Some Observations on Sore Throats, and their relation to Scarlet Fever*[a]. By James Bower Harrison, F. R. C. S., &c., Higher Broughton, Manchester.

It has long since been remarked, that during the prevalence of scarlet fever cases of sore throat are common, but I am not aware that any attempt has been made to classify these cases, or ascertain how far they are distinguishable from ordinary quinsy. With a view to ascertain this point, I have brought together a few instances from my note-book, which, however, were originally recorded with no such design, but were entered merely in the way of memoranda at the time of their occurrence. I hope the brief remarks which I have ventured to add to them may appear only as the natural reflections which would arise from their consideration.

A lady consulted me in July, 1847, respecting a sore throat. She had been occupied as governess in a family where scarlet fever had prevailed. The appearance of the throat was that of ordinary quinsy, the tonsils being preternaturally red and enlarged. I prescribed leeches, aperients, and gargles, but the throat got worse; the patient became unable to swallow, or indeed to open her mouth so as to render the state of the throat perceptible. I conceived that matter had formed, but scarifications liberated none, and it was difficult to make these with any degree of precision. After a time amendment gradually succeeded, but there was no evidence of the discharge of pus.

This case was, in all respects, so like ordinary quinsy, that, if it had not occurred in immediate connexion with the cases of scarlet fever, it would scarcely have deserved a remark. It may be observed, however, that the lady who had the quinsy

[a] Read before the Epidemiological Society, at the Meeting held March 7, 1853, at the House of the Royal Medical and Chirurgical Society, 53, Berner's-street, London.

was older than the children who were the subject of scarlet fever.

In May, 1848, I visited a little boy who had scarlet fever. He had the disease in a sufficiently marked manner, although mildly. During his illness, an elder sister began to complain of sore throat and headach; the papillæ of her tongue were elevated, and the tonsils enlarged and painful; the lymphatic glands of her neck were subsequently much swollen, but no rash made its appearance. I was given to understand that this lady had previously had the scarlet fever. A younger sister next fell ill, and she had the scarlet fever in a distinct but mild form. Although in the second instance the young lady had a somewhat elevated condition of the papillæ of the tongue, I should not have called the complaint scarlet fever if I had met with it in an isolated form, nor can I indeed properly say that it was such. But there seems some reason to suppose that this lady was not readily susceptible of the scarlet fever, and that the influence of the poison on her gave rise to a complaint which was not distinguishable from the common cynanche.

A single instance of this nature might indeed be attributable to coincidence, but many may be added which could scarcely be considered of fortuitous occurrence.

To resume, however. On the 7th of September, 1848, a man applied to me about what he conceived to be a syphilitic affection of the throat. He said the complaint had been contracted about eighteen months before; his voice was *husky*, and there was a deep blush of red on the soft palate and tonsils; the soft palate bulged forwards as if there was a collection of matter. I did not feel satisfied that the case was one of syphilitic sore throat, though I thought it possible that he might have some taint in the constitution. Some little time afterwards his daughter began to suffer from a like affection. There was the same bulging of the palate, and the same difficulty in opening the mouth, and in deglutition. In this case there was not the slightest suspicion of venereal taint. It was treated as a common sore throat, and got better. Afterwards another daughter had a sore throat, with fever, but also got better under ordinary treatment. These cases seemed like common quinsy, and yet one could scarcely imagine that three consecutive cases should occur in one family without believing that there existed some contagion. Were they dependent on the poison of scarlet fever, operating, as I conjectured it did, in the example recently mentioned, on a constitution not susceptible of the ordinary complaint? I have subsequently attended the family for many

years, but have had no reason to suppose, from anything which has transpired, that the man's sore throat was of venereal origin.

On the 25th of September, 1848, I was requested to visit a litte boy who had been at a school where scarlet fever was prevalent, and had returned home ill. He complained of sore throat, and had a hot skin and a quick pulse; he had vomited before my arrival; I noticed that he swallowed his saliva with difficulty, and in the manner observable in ordinary quinsy; the papillæ of the tongue were elevated, but there was no fur upon it. For several days he was unable to take his food, but he gradually got better, without any rash making its appearance. I was naturally asked whether the case was one of scarlet fever? I replied, that it was not easy to speak very positively, but that I thought it most probable that the complaint was scarlet fever, in a mild and scarcely recognisable form.

A lady was taken ill on the 7th of April, 1848. She had a sore throat, and her tongue was thickly coated, and the papillæ elevated; her pulse was very rapid. She soon fell into a state of extreme prostration: the tongue became dry and glazed; and subsequently the inside of the mouth was covered with thrush-like deposits; the glands under the jaws became rapidly enlarged; she had no rash, but eventually the skin desquamated, and large collections of matter formed in the neck, excavating, or rather dissecting out, the sub-cutaneous structures. In a note, which I made at the time, is the following passage: "Her appearance is like that of a miserable and destitute pauper in a state of starvation; the complexion bad, and the skin dirty-looking, and covered with desquamating cuticle; the teeth loaded with thick and black sordes; the tongue and mouth with aphthous patches; the body bent, feeble, and emaciated; she is unable to turn herself in bed." Eventually she got well, but it was after a long and tedious illness, and a troublesome suppuration both of the neck and ears; she had no rash at any period of the complaint.

On the 17th of April a servant girl who had been waiting upon her fell ill of scarlet fever, with a well-marked rash, and with all the other characteristic symptoms. At a later period the lady's father became ill: he had a sore throat, a quick pulse, and a general febrile disturbance. After being confined to bed for many days, he gradually recovered, but was for some time in a state of considerable debility. Previously he enjoyed remarkably good health. The mother next

fell ill, but perhaps as much from exertion and anxiety as from any specific ailment.

I think there can be no doubt that the first case was one of scarlet fever, but I could not pronounce confidently in the beginning; and I eventually formed my opinion rather from the severity of the after-symptoms, and the supervention of fever in the servant, than from any striking peculiarities in the disease.

On the 18th of June, 1850, I was requested to visit a little boy, eight years of age, who, on his return from Southport, had been seized with scarlet fever. He became comatose almost immediately, and died in about five days. The glands under the jaws had become rapidly and greatly enlarged.

A little girl in the same family fell ill the day after, also became comatose, had glandular swellings, and died after an illness of about the same length.

Another little girl, the only child left in the family, also sickened on the 21st, but she was less comatose, and eventually recovered.

In these cases the rash was well marked, the heat of skin very great, and there was no recession of the eruption. During the illness of these children the nurse became ill. She had a sore throat and a flushed face, but could not be said to have the scarlet fever. The tonsils were enlarged and red, but the tongue had not the cream-like fur which is often noticed. She underwent no particular treatment, but trusted to domestic means, and got better.

A young woman who came to assist in the house, and to reside there in order to take care of the children, also had a sore throat, became feverish, and was obliged to go home. She recovered without medical aid. These latter cases resemble some of the others which have been related.

In January, 1850, two children were taken ill with sore throats; a slight rash made its appearance on *one* of them, but there was none on the other. In both instances the papillæ of the tongue were elevated, but there was no other peculiarity. If it had not been for the appearance of the rash in one case, I could not have pronounced on the nature of the complaint in either. The children could scarcely be said to suffer any material disorder.

In 1851 a servant girl became ill with the scarlet fever; she had it in a marked and somewhat severe form, and eventually was removed to the Fever Wards[a]. The daughter of the

[a] The name given to the Hospital for Fever in Manchester.

gentleman with whom this servant resided afterwards fell ill of the scarlet fever, which she had in a mild form. Her sister was removed from the house by my desire, though I was told that she had previously had the scarlet fever. On her return, however, she likewise sickened of it. An infant was in the house, and it being thought desirable to have a wet nurse, a young woman was procured to suckle the child. (I may remark, by the way, that, at this period, the neighbours at the next house had the scarlet fever amongst several members of a young family.) After a short residence the nurse took ill with shivering, sore throat, and rapid pulse; the skin was bathed in a profuse perspiration; the face was somewhat flushed, but there was no distinct rash; the tongue assumed the character peculiar to fever after a day or two had elapsed; the appearance of the throat was such as occurs in ordinary quinsy,—the left tonsil suppurated. I was reluctant to consider the case as scarlet fever, not thinking that I had sufficient grounds for viewing it in that light, at the same time I admitted that the case was suspicious. At the request of the family she was, in the end, removed to the Fever Wards, as the case seemed, under any supposition, a proper one for admission into the hospital. Some little time afterwards, I called to make inquiries after her, and was informed by the late Mr. Ingham, the then resident officer, that after her reception into the house there were undoubted evidences that her complaint was the scarlet fever. In this case, notwithstanding the scarlet fever had existed in the house, I did not feel certain that the case was of that nature; and the early occurrence of perspiration, and the suppuration of the tonsils, made me indisposed to class it with the rest.

I have thought, from time to time, that I had discovered some little points of diagnostic value, but most of these I have subsequently abandoned as deceptive, and greater experience has only led me into greater hesitation.

A little boy was taken ill with scarlet fever. In the first instance he had a diarrhœa, which, however, in a great measure yielded to treatment. The glands about his jaws swelled rapidly, and the throat, so far as I could see it, presented a sloughy appearance. The breathing soon became difficult, and the fluids which he drank ran out from the nostrils. He died after a short illness. The rash had been well developed.

The child's mother next took ill; she had a furred tongue and a quick pulse, but no rash manifested itself. The throat ulcerated, and glandular swellings showed themselves at the angles of the jaws. This case gave me some uneasiness, but she did well in the end. I became ill myself during my at-

tendance on her. I did not take the scarlet fever, which I previously had, but I was faint and giddy, and unable to attend to practice.

A young woman was taken with shivering, pains in the limbs, sore throat, and redness of the skin. (The influenza was prevalent at the time, as well as the measles and the scarlet fever.) The redness of the skin was too slight to be called a rash, and I felt uncertain whether to consider the case as one of scarlet fever. I expressed my opinion as to the impossibility of a positive conclusion. In the meantime, the case did well. But the young woman, who was in domestic service, was so imprudent as to expose herself to cold in cleaning the steps at the hall-door. Her breathing then became difficult, and the secretion of urine very scanty, but there was no dropsy nor cough. Her recovery was very slow and imperfect.

A little girl came to assist as a servant, at a house where there was scarlet fever, but she herself had the complaint previously. She soon became ill, however, had a sore throat, and the papillæ of the tongue were raised. She recovered somewhat rapidly, and without treatment.

I could enumerate many more instances of a similar nature, but I should only render these observations tedious; and every practitioner, must, I think, have met with many like instances. It appears, then, from the contemplation of such cases, fair to conclude, that the poison of scarlet fever, when operating on constitutions which are incapable of showing the complaint in the usual form, produces an illness which cannot always be distinguished from the ordinary quinsy. This inference is rendered probable, because many cases, which might otherwise have been considered as of a questionable nature, have been found associated with genuine instances of scarlet fever, or have followed the fever in immediate succession. Moreover, these milder or more doubtful cases have presented many points of similitude amongst themselves. I shall now proceed to consider some cases which are, perhaps, of a still more equivocal character, inasmuch as they are not found in immediate connexion with cases of the ordinary scarlet fever. It is quite possible, however, that these complaints may be of a similar nature to those which have been already related. Some will be found to have commenced with considerable activity, and to have as quickly subsided; others to have been slow in their approach, and as tardy in their departure.

On the 4th of December, 1845, I was requested to visit a young woman, a servant girl, who, I was told, had got a fever. She had called upon me the day previous, but, regarding her

complaint as one of ordinary quinsy, I had thought no more about it. I now found her throat inflamed with small points of exudation on the tonsils; the tongue was furred, and the pulse 160 in the minute; the skin was, however, in a profuse perspiration. I directed her to be removed to the fever hospital. The next day I called to see her at the hospital. She had a slight rash on the skin, and the tongue had the appearance commonly manifested in the scarlet fever, but in a day or two afterwards she was quite well.

On the 9th of December in the same year, a servant boy called upon me, stating that he had a bad cold, which he attributed to an imprudent change in dress. He had a sore throat and a very quick pulse, and stated that he had rigors; but his tongue was not much furred, and he said that he had slept well the night before. The scarlet fever was prevalent in the neighbourhood, so that I concluded his case to be such, and sent him home with a letter to his employer to that effect. In a few days he was quite well.

On the 25th of March, 1847, I was requested to see a young woman in domestic service, her mistress fearing that she had taken a fever, and being afraid of infection. She had a quick pulse, an inflamed throat, and white specks of exudation on the tonsils. She had aching pains in her limbs and a trembling of the body. An attempt was made to get her into the Fever Wards, but it did not succeed. I applied some nitrate of silver to the throat, and prescribed some medicine for her. The following day she was almost well.

On the 26th of October, in the same year, I visited a young woman who had a flushed face, sore throat, headach, and quick pulse. There were small exudation specks on the tonsils. On the following day I touched the throat with the nitrate of silver, and on the 28th she was well, or nearly so.

A man sent for me on the 16th of March, 1848. His face was flushed, his throat sore, and the skin hot. He had been attacked with shivering, and had been unwell for seven or eight days previously. His wife was a patient of mine at the time with a sore throat. There was no rash apparent in either case, and none showed itself. These cases were treated like the former, and soon got well. In the wife's case there was a small sloughy-looking sore on the tonsil.

A lady sent for me in November, 1849, to see her servant. The patient had a flushed face, a rapid pulse, and a sore throat. I was pressed to give an opinion as to whether she was in a fever. I said that possibly she might be in the commencement of the scarlet fever, but that I had seen cases pre-

senting the same aspect suddenly get better. I touched the throat with the nitrate of silver, and prescribed some medicine for her. The next day she was nearly well, and on the third quite so.

A gentleman sent for me in September, 1850. He had been seized with a shivering fit, and was apprehensive that it was the commencement of a fever. I found him in bed with a hot skin, a rapid pulse, and a sore throat. The papillæ of the tongue were a little raised. On the following morning I found the right tonsil much swollen, and the left had some specks of exudation on it. In the end the right tonsil suppurated. On the night of his attack he perspired freely. This case had a close resemblance to some of those which have been related; and if scarlet fever had been present in the family, would have been classed with it.

On the 23rd of May, 1852, I was requested to see a young gentleman who was taken ill. His face was flushed, his tongue furred, his throat sore, and the neck swelled on the left side. No rash made its appearance, with the exception of some petechial-looking spots on the back of the wrist; his pulse had a jerking character. He got well after a short illness.

I think in these cases, which are in all probability instances of modified scarlet fever, that the tongue will generally be found less furred than in the common complaint, and the attack more sudden, and less frequently preceded by vomiting. I imagine also that the skin is more apt to perspire spontaneously; yet I am free to confess that I cannot entirely rely on these distinctions. My observations, in fact, lead me to question whether the complaint may not exist in all gradations, and be as common in the less noticeable forms as in the more apparent.

When the symptoms of scarlet fever are well developed, there are few complaints which can be more readily distinguished. But, on the other hand, there are, perhaps, few diseases which present themselves in such varieties of degree or diversities of form. I need not here describe the ordinary characters of the scarlet fever. In doubtful cases some information may be gained by attention to the condition of the skin and the kidneys. In affections which simulate this fever, a subsequent desquamation of the cuticle, or an albuminous condition of the urine, might lead us to pronounce more positively on the nature of the foregoing disorder. The full development of the rash has generally been considered a favourable sign; but I have known many cases of an unfa-

vourable or fatal kind, in which the rash has been both full and persistent. The patient, after doing well for some portion of the complaint, has become worse without any very obvious reason:—Where the glands swell very rapidly and largely about the jaws, the cases are always severe, and generally fatal.

Great drowsiness, at the commencement of the complaint, I have always considered to be a bad prognostic.

Diarrhœa or frequent micturition is not a good indication. An acrid and excoriating discharge from the nostrils is a still worse sign, particularly when accompanied by a *snuffling sound* in the breathing. When the rash has a petechial kind of appearance, and the odour from the body is unnatural, it may be presumed that the fever is of a low and dangerous type. In pursuance of these remarks on sore throats and scarlet fever, I may mention a form of disorder which is not unfrequently met with, and often loosely designated influenza, but in which the throat affection, though not prominently complained of, is, in reality, of paramount importance. The patient has aching pains in his limbs and back, with a quick pulse; he has lassitude, and says that he has a bad cold; but he does not cough nor complain of his respiration. The medical adviser may be apt to regard the complaint as one of those numerous little anomalous affections which it is impossible to class with any other; but if he happen to examine the throat with a spoon, he will perceive an abraded appearance at the back of the pharynx as far as he can see, and sometimes a few minute specks on the tonsils. If the patient be questioned on the subject, he will say that his throat is sore, but if not asked, will probably not notice it of his own accord. The tongue is generally clean, but has, in some cases, an abraded appearance in places. Yet the state of the throat does not seem adequate to produce the general *malaise;* and in all probability the part which is visible does not represent the whole of the malady. At any rate, I have found in these cases that a local treatment is in itself, to some extent, efficient; so that I believe the disturbance of the system is in a great measure a sympathetic one. It will not be necessary to relate many of these cases; one or two may suffice.

A gentleman sent to consult me on the 3rd of May, 1850. He complained of aching pains in the limbs, general uneasiness, lassitude, and sore throat; the skin was hot, and the pulse quick. On looking into the throat, I found the back of the pharynx presenting superficial abrasions, besides which there were small exudation spots on the tonsils. The tongue

was clean. The wind had been for some time in the north-east. Probably these cases are more commonly met with during an east wind.

In December, 1851, I was requested to visit a young woman, who was employed as a wet nurse. She complained of aching pains in the back and limbs, with sleeplessness, and general *malaise*. She looked ill, had a quick pulse, and said she had a sore throat. On examination the throat presented the appearances already named. On the following day I found her much in the same state. I prescribed quina with dilute sulphuric acid, under which treatment she gradually improved in every respect. The affection of the pharynx seemed to extend beyond the reach of observation. The weather was moist at the time, and had been so for several days.

A young woman, December 12, 1852, was affected with headach, loss of appetite, and pains in the limbs. She said that her throat was sore. On examination, I found the peculiar abraded appearance of the pharynx, but she represented the pain as beyond the reach of observation. She recovered slowly under the use of quina and dilute sulphuric acid. In this case the tongue was loaded with fur, which is not common in these cases, or, at least, not a necessary part of them.

A young gentleman sent for me on the 12th of April, 1852. He had been affected with sore throat, shivering, and pain in his limbs. On examining the throat with a spoon I found the upper part of the pharynx superficially ulcerated, having what I have termed an abraded appearance. It seemed that the ulceration extended further than could be traced, and appeared to increase as it extended. I contented myself with prescribing an acidulated mixture of quina and a couple of aperient pills. It may be remarked, that the use of the nitrate of silver in these cases, as an application to the back of the throat, would in most instances expedite the recovery, but in many, the local affection extends beyond the sphere of observation; and it must be remembered that the use of nitrate of silver is to be avoided where it is possible, from its injurious action on the teeth; yet it will occasionally be desirable or necessary to resort to it, and the application will be made in an eligible manner by the aid of a camel's-hair brush or small probang, saturated with the solution. The solid caustic should not be employed, from the possibility of its escaping into the throat, as it becomes softened by the saliva and loosened from the instrument in which it is contained. The writer remembers the occurrence of this accident in the case of a little patient, but no bad re-

sult followed, as the caustic was speedily removed, and fortunately had been coated with wax.

It sometimes happens that the mouth alone is affected with a kind of aphthous inflammation. The complaint does not extend to the throat, and is more painful than serious. The gums are intensely red, the tongue ulcerated, and albuminous-looking deposits streak the mouth; pustular spots form on the lips. I lately attended a gentleman for this affection, and the complaint was a little obstinate, though it never extended to the throat. It was attended with a profuse flow of saliva. I gave him the chlorate of potash, and I think with some benefit. I believe this complaint is sometimes epidemic.

These observations, then, would render it probable that the peculiar *virus*, which occasions the scarlet fever, is more frequently operative than is commonly supposed, and that it manifests itself in many irregular and masked forms of disorder. It may be possible hereafter to generalize more fully upon the affections which simulate scarlet fever; and in the mean time these cases and brief remarks are offered in the humble spirit of inquiry.

Art. XIII.—*On the State Poison of the Athenians, used in the Case of Socrates.* By Jonathan Osborne, M.D., M R.I.A., King's Professor of Materia Medica, Physician to Mercer's Hospital.

"Cum in manu jam mortiferum illud teneret poculum, locutus ita est, ut non ad mortem trudi, verùm in cælum videretur ascendere."—Cicero, *Tusc. Quæst.* i. 29.

It is well known to the readers of history, that the death of many of the most eminent characters of antiquity has been attributed to poison. No doubt, a propensity towards the marvellous and mysterious has had no small share in those relations, and we are almost prepared to expect that such persons as have kept the world in a state of astonishment during their course of life should not disappoint us at its termination. We are led to expect that such, if not falling by the sword, should at least be cut off by poison, in order to avoid the common lot of dying in their beds like the rest of mankind. Amongst the great men of antiquity, a kind of martyrology might be composed of those suspected to have died of poison. On examining, however, the poisons actually known to the ancients, and then recollecting the great improbability that they were possessed of any which have eluded the research of

modern science,—it will be in our power to show, that, however great the number of cases in which poison was either administered or suspected, yet the number of poisons at their disposal was actually small, and so far limited as to enable us to identify them whenever we are furnished with the leading symptoms attending their fatal effects: a task, the performance of which would be more difficult, if not impossible, with the more extensive toxicology of modern times.

In Rome, the crime of poisoning is mentioned in the laws of the Twelve Tables (B. C. 449), but is evidently confounded with a belief in the potency of magical incantations. *Qui malum carmen incantasset, malum venenum taxit, dicitve parricida esto.* And this appears to have been enacted prospectively, and not with reference to any cases of the crime at that time committed; if it is true, as stated by Livy[a], that the first instance of a judicial trial for poisoning at Rome was in the Year of the City 422 (B. C. 329). This was occasioned by the death of a number of persons of rank at the same time, and with nearly the same symptoms. Suspicions were excited, and private information was given, that certain matrons were in the habit of concocting poisons (*venena coquere*). Two patrician ladies, who were in the number of the accused, declared that they were not poisons but medicines. Having been ordered to test their sincerity by drinking them, they at once acquiesced, and were joined by twenty others who had been engaged in the same pursuit. The result, however, was that they all died, and that in consequence of further informations, an additional number of one hundred and fifty matrons were condemned. The probability is, that these ladies were engaged in the benevolent design of supplying medicines for the relief of the sick, and that the articles they were engaged in were either *Veratrum album*, or *Helleborus viridis*, both of which were natives of Italy[b], and were used by the ancient physicians in the form of decoctions; but that, in the plenitude of their confidence in their virtues, they were unacquainted with their drastic and exhausting effects, when taken in an overdose. When we compare this transaction with the pictures handed down to us of Medea of Colchis, and of Circe of Italy, and with the witches of our own country, it appears inexplicable, how the female sex, so remarkable for the most disinterested acts of benevolence, should at such remote periods of time, and in such widely distant countries, have been accused of endeavouring to destroy their fellow-creatures. We

[a] Lib. viii. 18. [b] Savi, Materia Medica Toscana, 1805.

can only ascribe it to the eagerness with which they have always engaged in whatever appeared likely to alleviate pain or sickness, without the opportunity of acquiring the necessary knowledge, or of foreseeing the probable consequences. Hence, in rude and ignorant ages, their generous efforts in practising medicine have been misinterpreted, and in so many instances have met but an indifferent reward.

The oldest account now extant of poisons is the poem of Nicander of Colophon (Αλεξιφάρμακα). The author lived during the reign of Attalus Philometer, the last King of Pergamus (B. C. 134), and the advantages he enjoyed were most extensive. The king—inheriting in a large degree the love of the natural sciences, which was so conspicuous amongst the successors of Alexander—cultivated in his gardens several well-known poisonous plants, as hyoscyamus, aconite, hemlock, and hellebore, with which he made experiments, in order to ascertain to what extent they were under the control of antidotes. In this poem, however, we have no account of any vegetable poisons, except those mentioned. His knowledge of the poisons of various serpents, appears founded on observation. His blistering fly is not that at present used, but the *Melöe cichorei*. We shall have occasion to refer to his description of hemlock, when we come to speak of the symptoms produced by it.

Mithridates, the celebrated King of Pontus, the extent of whose attainments may be estimated from the statement of Pliny, that he could speak twenty-two languages so as to transact business with the deputies of as many different tribes, is related to have tested the powers of poisons and their antidotes by experimenting with them on animals. From the constant apprehension of being poisoned, he was said to have fortified himself against them by taking some of them daily, in combination with a suitable antidote, and then to have become poison-proof. We may, however, form a judgment of the feebleness of his poisons from Pliny, who has recorded one of those which he had for his daily consumption along with his antidotes. This was the blood of ducks, caught in a certain district of Pontus, and which were believed to live on poisonous food[a]. Another evidence of the narrow limits of the toxicology of his time is to be found in the composition of the famous Mithridate, which, if not actually his invention, yet is sufficiently authentic as to its antiquity. From this we are enabled to judge of the mode of action of the poison it was intended to combat. This

[a] Pliny, lib. xxv. c. 2.

composition, which was retained in the pharmacopœias up to the middle of the last century, consisted of fifty-four ingredients, in various proportions, well justifying the remark of Pliny, *Ostentatio artis et portentosæ scientiæ venditatio manifesta est.* But when all these ingredients are examined, they prove to be opium, valerian, and castor, with thirty-one aromatics, and eight stimulating gum resins, mixed up with some insignificant ingredients, in the form of an electuary, forming a combination resembling Dalby's carminative, well suited to quell the pain and disturbance caused by acrid vegetable substances, such as hellebore and aconite, but of no efficacy against any of the great poisons of our time.

At a later period, the paucity of knowledge with respect to poisons may be inferred from several other circumstances. A woman at Smyrna was accused before Dolabella, the Roman Proconsul in Asia, of having poisoned her husband. Dolabella, unable to come to a decision, referred it to the Areopagus, and this court appears to have served as a model of procrastination to some of the most eminent tribunals of our own time, for they evaded pronouncing any sentence, but cited the parties to appear before them at the expiration of one hundred years! Again, when Tiberius was said by Piso to have caused Germanicus to be poisoned, it is related, as the most convincing proof of the fact, that when his body was burned, the heart appeared entire in the midst of the flames.

At Nero's first attempt on the life of Britannicus, the poison, which was supplied to him by the famous Locusta, produced only an action on his bowels. A second decoction was tried on a goat, which having survived five hours, a still stronger decoction[a] was made and given to a pig, which died immediately. The poison thus tested was given to his victim with the desired effect. Three attempts, however, which he made to poison his mother failed, and he desisted, being under the impression that she had fortified herself by means of antidotes.

The most complete evidence of the limited toxicology of the ancients is to be found in the great work of Dioscorides, written in the reign of Nero. In this, which is a kind of encyclopædia of all that he had witnessed in his travels, or found recorded on the subject of the Materia Medica, there is one book (the sixth) exclusively devoted to poisons and their remedies. Omitting cantharides, and the articles derived from the mineral kingdom, as not belonging to our subject, the following are all the

[a] Iterum ac sæpius recoctum. Sueton. Nero, c. 34.

poisons known to him: Colchicum (Εφήμερον). Dorycnion, not identified. Aconite, and the honey of Heraclia in Pontus, where that plant abounded. Coriander (Κόριον), identified with our *Coriandrum sativum*, but stated to cause a temporary insanity, like that of drunkenness, irreconcilable with any modern observations. Psyllium, identified by Sprengel with the *Plantago psyllium*. Conium, of which hereafter. The yew (Σμίλαξ), well identified, and described as fatal to cattle. The juice of carpasus (Καρπάσου ὀπὸς), causing stupor and suffocation; entirely unknown. Sardonia (Σαρδονία πόα) a kind of ranunculus, from Sardinia, causing spasmodic motions of the lips (whence the term *Risus Sardonicus*) and also affecting the intellect. Hyoscyamus—Mandragora, nearly identified with *Atropa belladonna*[a]. Meconium, evidently opium, and described as the juice of the poppy. Pharicum—Toxicum, used by barbarians for poisoning arrows (whence the name);—if swallowed, causing inflammation of the lips, with furious madness, requiring the patient to be tied. Fungi, either taken in excess, or from some peculiar kinds intermixed, causing strangulation. White hellebore—Thapsia; doubtful whether *T. garganica*, or *asclepium;* described as emetic and cathartic. In the mineral kingdom he has gypsum, litharge, lime burned and slaked, sandarach and arsenicon, identified as the red and yellow orpiment. They both, as well as lime, described as corroding and torturing the intestines when taken internally. No acid was known in his time except vinegar, and even the effects of it were unheeded; for the accidents occurring from fluids being left exposed to the air in brazen vessels, he ascribes to some poisonous animal having drank out of them.

Bearing in mind how restricted and imperfect the toxicology of the ancients must have been, we now proceed to consider the circumstances attending the death of Socrates. He was poisoned in the first year of the ninety-fifth Olympiad (B. C. 402)[b]. "When the fatal cup was brought, he asked what it was necessary for him to do. 'Nothing more,' replied the servant of the judges, than 'as soon as you have drank off the draught, to walk about till you find your legs become weary, and afterwards lie down upon your bed.' He took the cup without any emotion or change in his countenance, and looking at him in a steady and assured manner, 'Well,' said he, 'what say you of this drink? May a libation be made out of it?' Upon being told that there was only enough for one dose, 'At

[a] Paulus Æginetus, by Adams, vol. iii. p. 240. [b] Plato, Phædon.

least,' said he, 'we may pray to the gods, as is our duty, and implore them to make our exit from this world and our last stage happy, which is what I most ardently beg of them.' Having spoken these words, he kept silence for some time, and then drank off the whole draught. After reproving his friends for indulging in loud lamentations, we are informed that he continued to walk about, as he had been directed, till he found his legs grow weary. Then he lay down upon his back, and the person who administered the poison went up to him and examined for a little time his feet and legs, and then, squeezing his foot strongly, asked whether he felt him? Socrates replied that he did not. He then did the same to his legs, and proceeding upwards in this way showed us (Plato is speaking) that he was cold and stiff; and he afterwards approached him, and said to us, that when the effect of the poison reached the heart, Socrates would depart. And now the lower parts of his body were cold, when he uncovered himself, and said, which were his last words, 'Crito, we owe Æsculapius a cock. Pay the debt, and do not forget it.' 'It shall be done,' replied Crito, 'but consider whether you have anything else to say.' Socrates answered in the negative, but was in a short time convulsed. The man then uncovered him; his eyes were fixed, and when Crito observed this, he closed his eyelids and his mouth."

The mode in which I think it may be proved that hemlock was essentially the poison employed in this particular case, and that it was the state poison of the Athenians, is by reviewing the subject under three heads, viz., first, the name of the poison used; secondly, the botanical characters and collateral details respecting it; and thirdly, and chiefly, the series of symptoms preceding its fatal effects.

The poison which is called *φάρμακον* by Plato in the above-quoted passage is called *κώνειον* by Xenophon, in relating the execution of Theramenes; and it will be recollected that only forty years intervened between his death and that of Socrates; and the same word is used by Plutarch, in describing the state poison by which Phocion fell a victim to the Athenians in the year B.C. 317. But the most striking evidence that the state poison was commonly known at Athens by the name *κώνειον*, is afforded by Aristophanes, who was the well-known contemporary and satirist of Socrates. In "The Frogs," acted many years before his death, we have a passage which appears to have altogether escaped the observation of Dr. Christison:—

"Hercules. Then there is a short and beaten road—that by the mortar.

"Bacchus. Speak'st thou of hemlock, then?

"Hercules. Most certainly.

"Bacchus. A journey cold and winterly, forsooth, for it immediately congeals the shins"[a].

This passage, as well as another in the same play, on death by hemlock, is in much the same taste as the puns and other facetiæ on the subject of hanging, which are so well understood by the populace of our own times[b].

The Latin authors, and especially Pliny, use the word cicuta in all the cases in which they had occasion to mention the poison used at Athens, so that no doubt is entertained respecting the identity of κώνειον and cicuta. Dr. Sibthorpe, in the *Prodromus Floræ Greciæ*, says the modern name of hemlock is βρομοχορτον, but on this point he appears to have been misinformed, because in the Greek Pharmacopœia, published at Athens in 1837, which contains the modern vernacular names of all the medical plants of Greece, the name affixed to hemlock is κώνειου ποα, and this must be considered as the latest and best authority on the subject.

Next for the botanical description. It is true that from the want of a systematic arrangement, the plants mentioned by ancient authors are often difficult to recognise, and in some cases impossible. In the present case, however, the difficulty is greatly diminished by the combination of several circumstances, which, taken singly, would fail; but which, taken together, form an accumulation of evidence. Dioscorides (lib. iv.), describing κώνειον, says it has a knotted stem, like that of fennel; and Pliny says it is jointed like a reed. Dioscorides describes it as like the ferula, with a heavy smell, its branches shooting with umbels at their summits, a whitish flower, a fruit like that of anise, but whiter. From this it is evidently

[a] ΗΡ. ἀλλ ἔστιν ἁτραπὸς ξύντομὸς τετριμμένη
ἡ διὰ θυείας.
ΔΙ. ἆρα κώνειον λέγεις;
ΗΡ. μάλιστα γε.
ΔΙ. ψυχράν γε καὶ δυσχείμερον
ἐνθὺς γὰρ ἀποπήγνυσι τ'αντικνήμια.

[b] "Hangman. I'll throttle him.
Dancing Master. I'll make him cut a caper three story high."
—Swift, *Account of Wood's Execution.*

"*Epigram on a certain eminent Prelate, from the Times.*
"Suspend your judgment, Judas P———t cries.
Suspend yourself! th' indignant world replies."

an umbelliferous plant. Then, as to its size, he says it is about the same as that of fennel; and Pliny describes it as being about two cubits, that is, a little larger than the size the plant attains in our climate, as might be expected. Both agree in the heaviness of the odour; and Pliny mentions the *caulis nigricans*, which seems clearly to refer to the spots on the stems, which in this climate are of a dark purple colour, and serve, with those who are not botanists, to distinguish hemlock from all our other umbelliferous plants with which it could be confounded. The hollow root mentioned by Dioscorides, and after him by Pliny, and which appears to Professor Christison so inconsistent with hemlock, may very easily have been the result of a superficial examination, considering that the stem, as in other umbelliferous plants, is hollow down to the bottom; and this part of the description, if strictly interpreted, cannot be reconciled with any; for there is no plant with which I am acquainted, umbelliferous or not, that has a hollow root. Pliny has one feature in his description which appears to me peculiarly characteristic of the plant, when growing in rich soils, comprised in the following words, viz., *in cacuminibus racemosus*, pointing to the crowd of umbels and thickset leaves at the termination of every branch. Now the *Conium maculatum*, according to Dr. Sibthorpe, grows in various parts of Greece. He found it on heaps of rubbish near Constantinople, not unfrequently in Peloponnesus, and in the vicinity of Athens and Megara; while, according to the same eminent botanist, if the plant we have now been considering be umbelliferous, we are spared the labour of any further inquiry, for he says distinctly that NO OTHER POISONOUS UMBELLIFEROUS PLANT IS TO BE FOUND IN GREECE.

In addition to the above, Pliny states that the cicuta (described by him as the Athenian state poison) grows in Attica, and at Megara. He also describes the seeds and leaves as peculiarly fatal when drank in wine, and that the seeds are the most noxious as compared with the stem and foliage. Now, the conia in the seeds of hemlock has been proved, by the experiments of Professor Geiger, of Heidelberg, to exceed that of the rest of the plant in the proportion of 133 to 1[a]; and all who have used a carefully prepared tincture of the seeds, and made a comparison between it and the extract of the leaves, will be fully prepared to admit its superiority.

The identification of this poison with hemlock, by a com-

[a] Scharlau, Pharmacie. Leipzig, 1837.

parative review of their effects, is, however, the most interesting part of this inquiry. Professor Christison views them as quite irreconcilable. He says, the Athenian state poison must be considered as producing spasm and coldness of the limbs, gradually advancing to the internal parts, causing death eventually by acting either on the heart or respiration, and without affecting the functions of the mind to the very last—a combination of symptoms not to be produced by any poison now known[a]. But, with the utmost respect for so high an authority, I think that, when we make allowance for the looseness of expression belonging to authors describing the physiological phenomena, without having been professionally acquainted with them, the resemblance between what occurred at the death of Socrates and that produced by hemlock, according to modern observations, is so close that no reasonable doubt can be entertained of their being the result of the same agency.

In the first place, when the executioner informed him that his legs should be the first to become paralyzed, he must have done so from the observation of its effects on former occasions; and, to show that hemlock does first paralyze the lower extremities, I cannot do better than quote from the truly valuable series of experiments made by Dr. Christison himself. In the first of these, six drops of conia were dropped into the throat of a puppy ten weeks old. In thirty seconds there was sudden convulsive respiration, stiffness of the hind legs, immediately followed by great feebleness of these limbs. In a few seconds the fore legs also became very feeble. In sixty seconds after the introduction of the poison the breathing ceased, and slight convulsive tremors followed for a single moment more. In the second and third experiments with puppies the hind legs were first affected. In the last, after all its limbs became completely paralyzed, yet, when called to, it wagged its tail feebly, turned its head in the direction of the voice, and made a feeble effort to raise the head, but could not; its movements did not completely cease till forty-two minutes.

In the fifth experiment, on a rabbit, the hind legs became stiff in one minute and a half, and the fore legs not till two minutes and a half. In the ninth experiment, three drops of conia were dropped into the eye of a strong and furious cat. Instantly it made violent efforts with its fore legs to rub out the poison; while continuing so to do, the hind legs in forty seconds became affected with slight convulsions, and then grew so weak that it could not support himself on them. Soon after, the fore

[a] Transactions of the Royal Society of Edinburgh, 1836.

legs also became weaker and weaker; all voluntary motions, however, did not cease until ninety seconds had elapsed.

In the fifteenth experiment, when a solution of the extract of hemlock was injected under the skin of a dog's back, in three minutes and a half the hind legs were weak and rather stiff, and in six minutes the fore legs also, and in twenty minutes the respiration ceased. In all, the paralysis commenced in the hind legs; and in no one instance of the sixteen experiments related in Dr. Christison's paper did the symptoms occur in an inverse order. It is also to be noted, that in all, the eyes of the animals under the poison remained open. This was also the case at the death of Socrates; for, in the relation of Plato above quoted, it is stated that, when his body was uncovered, his eyes and mouth were closed by Crito.

The coldness of the limbs mentioned by Plato was a well-known effect of the state poison; and no doubt, allusions to it were amongst the best-established jokes at Athens, as we have seen in the passage quoted from Aristophanes. In Nicander, it is a leading characteristic (*ἀκρα δε τοι ψυχει*) of *κώνειον*, and also in Dioscorides[a] and Pliny[b]. In two cases recorded by modern observers, this symptom has been so remarkable, as to be specially mentioned. The first of these was published by Orfila[c], and has been subsequently imperfectly copied into some English works. "M. Haaf, being on garrison at Torrequemada in Spain, was sent for in the evening of the 2nd of March, 1812, to see a grenadier who was reported to be dying. He found him insensible, breathing with the greatest difficulty, and lying on straw in a small apartment, crowded, and filled with smoke. His pulse was small, hard, and down to 30; *the extremities cold;* the face livid, as if he had been strangled. He was placed in the fresh air. He was informed that, along with several of his comrades, this grenadier, who was remarkable for his appetite, had partaken more plentifully than the others of a soup in which hemlock had been mixed: that after supper they all appeared as if drunk, and felt pains in the head and throat. Immediately after supper, he undressed himself, lay down, and had fallen asleep, while the others sat at table talking together. In one hour and a half afterwards, when they began to feel ill, they observed him moaning and breathing heavily." After relating the measures employed, M. Haaf continues:—"After an emetic, he made several ineffectual attempts to vomit, and soon became evidently worse. Never-

[a] To be quoted hereafter.

[b] "Si enecat incipiunt algere ab extremitatibus corporis."—Lib. xxiv.

[c] Traité des Poisons. Paris, 1815.

theless, he still spoke, and complained of being very cold. Soon after, he lost his speech, and became unconscious, labouring with incessant palpitations. He died three hours after taking the soup."

The second modern case appeared in the Journal de Chimie Médicale for August, 1842. In this, a gentleman, having been in the habit of taking an infusion of aniseed, got by mistake an infusion of the seeds of hemlock. In a short time, alarming symptoms came on, and in particular, *coldness of the extremities* and slowness of the pulse, which, however, soon ceased after the employment of an emetic, and he recovered.

The report of the third case we owe to Dr. Hughes Bennet[a]. Duncan Gow, a tailor, forty-three years of age, was brought in the evening by the police into the Royal Infirmary, Edinburgh, apparently in a state of intoxication, but on being taken into the waiting-room was found to be dead.

Dr. Bennet, who made an examination of the body, recognised a quantity of vegetable matter in the stomach to be the leaflets of the *Conium maculatum*. He also identified it by the odour exhaled, when beaten up with a solution of potash, and by an inspection of the plant growing in the locality where it had been gathered.

The unfortunate man was in extreme poverty, and on this day had taken nothing except a share (along with two others) of half a mutchkin of whisky. The hemlock having been brought to him by his children, in mistake for parsley, he greedily ate it along with bread. Death must have taken place within about three hours and a quarter afterwards. Dr. Bennet was able to collect the following particulars from policemen and others, who saw him within this interval of time, and which I take the liberty of extracting from his interesting paper.

He was observed to stagger as he went down some steps. To some children who were sitting on the steps he said, "get out of the way of the lame horse." One witness described that he could not walk rightly, and was staggering as a man in liquor. His mode of progression attracted a number of boys and girls, who laughed at him, believing him to be intoxicated. He was heard to speak to them, but what he said is not known. In reply to a policeman, he desired to be taken to his own house at the top of the Canongate. He also said that he had completely lost his sight, and had not the perfect use of his limbs, but expressed his willingness to walk forwards till assis-

[a] Edinburgh Medical and Surgical Journal, 1845.

tance could be procured. Although supported by one arm, after moving with great difficulty past four or five shops, his legs bent under him, and he fell upon his knees, and when he was pulled on by the police, his legs were trailed after him. One of the police-officers, on first seeing him, pronounced that he was not drunk, and another confirmed it from the manner in which he was lying, and from the loss of power in the legs. Dr. Tait saw him in about two hours. He found his powers of motion completely prostrated; his pulse and breathing perfectly natural. He thought he perceived the odour of spirits about him, but the policeman thought otherwise. The heat of skin was natural. In forty minutes afterwards all motion of the chest appeared to have ceased; the action of the heart was very feeble; and the countenance had a cadaveric expression; pupils fixed. In this state he was brought to the Infirmary, and on his arrival was found to be dead. As Dr. Bennet observes, perfect paralysis of the inferior extremities was ascertained one hour and a half after the poison was taken, and that of the arms half an hour later.

The temperature remaining natural, has not been mentioned whether in the body or extremities, and from Dr. Tait being at first under the impression that it was a case of intoxication, it probably may not have occurred to him to examine this point closely. Besides, as fourpence was missing from his pocket, he may have taken whisky, with the effect of keeping up heat longer than usual.

The action produced on the mind by hemlock is, however, that which must excite the deepest interest when we believe it to have been the poison taken by Socrates. I well recollect my disappointment when, after reading the account of his life, I came to his last words, as reported by Plato. That he who had been the great moralist of antiquity, and who had taught such sublime doctrines on the relative duties of life, and on the future state of existence, should, after he had taken a solemn farewell of his weeping friends, and had lain down to die, rouse himself up in order to give directions about sacrificing a cock to Æsculapius, was so different from what the whole tenor of his life, and especially the concluding scene of it, would lead us to expect, that we must all have felt "what a falling off was there." Several commentators have acknowledged a difficulty in accounting for his offering a sacrifice to the divinity presiding over the medical art at a time when he knew it must be ineffectual. When, however, we become acquainted with the effects of hemlock on the human subject, we are enabled both to do justice to the fidelity of Plato as an historian, and to ac-

knowledge the greatness of the character of Socrates to the last. The fact was, that these words were spoken by him when under the influence of a narcotic poison, rendering him delirious, and we shall see that the peculiar character of this slight delirium requires only an attentive consideration to enable us to add it to the proofs that the poison was essentially hemlock.

A number of writers on the Materia Medica have been led, one after another, to set down furious delirium as a symptom of poisoning by hemlock. The foundation of this statement rests on two cases, both of them unworthy of credit. The first, said to be related by Kircher[a], of two monks who, having partaken of a dish composed of the roots of hemlock boiled up with meat, almost immediately became deranged: the one, rushing into a neighbouring lake, called out that he had become a goose; the other, tearing off his clothes, ran into the street shouting that he was a duck, and required the river to extinguish the fire in his intestines. The second narrative is by Mathiolus[b], of a vine-dresser and his wife, who took hemlock roots in mistake for parsnips. When they awoke in the night they became quite furious,—wandering about in the dark, knocking their heads against the walls, so that their faces in the morning were swollen with effused blood. It being impossible for Mathiolus to identify the plant, for the leaves were only beginning to shoot, and equally impossible to tell *what else* this old couple may have taken before going to bed: and the narrator of the former case being notorious for credulity, and not an eye-witness of the aquatic scene he describes; and both cases standing alone and completely at variance with others related by competent judges, they ought no longer to be allowed to mislead and disfigure the records of the Materia Medica.

Now, for the effects of *κώνειον* on the mind, as ascertained by credible authorities. From the description of Nicander, it abolishes the mental powers, producing what we call coma,

κεῖνο ποτόν δή γάρ τε καρήατι φόινον ἰάπτει,

but no mention of madness or delirium; and in Dioscorides (lib. vi.), the following is the enumeration of the symptoms:—Vertigo, loss of vision, hiccough, *disturbance of the mind* (*διανοιας παραφορα*), coldness of the extremities, convulsions, suffocation, &c.

In Le Roux's Journal is the case of a man who took the extract of hemlock in order to obtain relief in a cancerous affection, but was obliged to diminish the dose in consequence of a *slight delirium* and tendency to faint produced by it.

[a] Wepfer. [b] Com. in Diosc., lib. vi.

In the three cases quoted (page 337), there was no delirium sufficient to attract notice. In the case of four Dutch soldiers poisoned in 1744, at Waltham, by eating the leaves boiled with bacon, in which all were seized with violent vertigo followed by coma, and two of them were convulsed and died in about three hours, Dr. Watson, who carefully examined the circumstances, mentions no delirium[a]; and in Dr. Bennet's case, the only part resembling delirium was the exclamation "get out of the way of the lame horse." Nevertheless, in my experience with the extract, and more especially with the tincture of the seeds, I have found that when perfect and profound sleep has not been obtained, dreams of a peculiar character have been substituted. In these the hallucination was rather agreeable than otherwise, generally recalling the ordinary occupation of the individual, but yet always accompanied by a sense of some impediment, or of some difficulty arising from a want of bodily power. For example, a horse-clipper recovering from acute rheumatism, after two grains of the extract, was exhilirated at finding himself working at his professional employment, and the only drawback was great stiffness and weariness in handling the scissors. A young woman, from twenty-five drops of tincture of the seeds, dreamt of her native village, and had all the surrounding scenery full in view, but was obliged to cross a river, and was in great terror from the difficulty of avoiding falling in. The dreams suggested by it are in imaginative range quite inferior to those of opium, and appear to be just of that extent that, when Socrates felt his limbs becoming powerless, he was likely to think of bodily infirmity, and then of medicine, and, by association of ideas, of Æsculapius and the cock, the bird usually sacrificed to that divinity.

Some experiments which I had occasion to make with the fresh juice of hemlock proved it to have a cathartic effect, from which the extract is comparatively free. Hence, if given in this form as a poison, it must have been liable to failure, and could not have been relied on. It would appear then absolutely necessary to combine it with some ingredient to correct this tendency. Nothing was so well suited for this purpose as the juice of the poppy, which was well known, and was also an indigenous plant in Greece. In the course of my trials with hemlock I was induced to combine it with opium, giving them in half doses conjoined, as an equivalent for one entire dose of either. In this way, not only was the cathartic effect of the hemlock prevented, but a deeper and more certain hyp-

[a] Watson, Philosophical Transactions, vol. ix.

notic effect was obtained. When the sleep was accompanied by dreams, the latter partook more of the hemlock than the opiate character. Thus one dreamed of his brother, whom he had not seen for two years. In another dream he was near his home in the country, but was pursued by some kind of nondescript animal from which he was endeavouring to escape, but ineffectually, on account of a numbness in his limbs. Another went to the fair to sell a cow, but was in great perplexity on account of a cow having strayed away from him. On another occasion he was near his residence, but could not get to it from a want of power in his limbs.

Now it is proved that some such combination was known at the time from the following passages in Theophrastus[a], who was born only twenty-eight years after the death of Socrates. These are his words:—"Thrasyas, the Mantinean, stated that, by making use of the juices of the κώνειον, the poppy, and such other things, he had discovered a substance which occasioned death easily and without pain, and so portable and minute that the weight of a δραχμα was sufficient and absolutely irremediable, and it was capable of being preserved for any time without alteration."

This statement has appeared to Dr. Christison to show that hemlock could not have been the state poison from its not being mentioned as such by this author, who lived when the memory of the transaction must have been fresh. A second perusal is, I think, sufficient to convince us that the object of the paragraph was not to state that κώνειον and poppy juice were poisons, a fact sufficiently notorious at the time, as we have seen, but that a certain individual had discovered a method of preparing them in a concentrated form, so as to insure both their potency and permanency. That a uniformly strong and certain preparation was a desideratum, at the time of the death of Socrates, is evident from the caution of the executioner, that none of the contents of the cup could be spared. Also at the death of Phocion we are informed that, having drank all the juice of hemlock, the quantity was found insufficient, and the executioner refused to prepare more unless he was paid twelve drachmas[b]; and when Seneca wished to poison himself, a friend and physician, at his request, procured for him some of the Athenian state poison, but when he took it the effect was inadequate[c]. From the account of this preparation being portable, surely it is not going too much on conjecture to infer that this was a skilfully made extract, or inspissated juice of

[a] Lib. ix. 18. [b] Plutarch, Phocion. [c] Tacitus, Ann. lib. lxiv.

both articles combined; and from what we know of the effects of these preparations, and of their doses, it is clear that death might be made nearly certain with a quantity not exceeding the weight of an Attic δραχμα, which was about sixty grains.

From these considerations I think it is nearly proved that the φαρμακον mentioned by Plato was essentially hemlock, and that there is also a strong probability that it was mixed with poppy juice; that during the operation of the poison, and after the numbness of the legs, it occasioned a slight delirium, under the influence of which the last words of Socrates were pronounced; that these words are to be set apart from the discourse previously delivered by him, and to be considered as the result of a narcotic poison.

Art. XIV.—*Observations upon Chronic Rheumatic Arthritis of the Shoulder.* By Robert W. Smith, M.D., M.R.I.A., Professor of Surgery in the University of Dublin; Surgeon to the Richmond Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Secretary to the Pathological Society of Dublin, &c. &c.

(*Continued from* p. 16.)

In the Museum of St. Bartholomew's Hospital there are preserved two shoulder-joints, which present, in my opinion, well-marked examples of the effects of chronic rheumatic arthritis. They are the shoulders of the same person, and are thus described in the Catalogue[a]:—No. 59.—"A shoulder-joint. The capsule is thickened; in its upper part there is an irregular opening, and the tendon of the supraspinatus seems to have been torn away from the tuberosity of the humerus. The tendon of the biceps appears to have been torn near its attachment to the glenoid cavity, and has become adherent to the head of the humerus; a portion of it in shreds remains attached to the glenoid cavity.

"No. 60.—The other shoulder-joint of the person from whom the preceding specimen was taken. The capsule is thickened; the tendon of the biceps, separated from the glenoid cavity, has become firmly adherent to the head of the humerus, and an irregular, nodulated deposit of bone has taken place around the part to which it is now attached. It is presumed that the alterations in these joints were the effects of external injury, probably of dislocation of the humerus."

[a] Page 128, No. 59; and page 129, No. 60.

It is unnecessary to make any observation upon these specimens, the appearances described being so strikingly characteristic of the peculiar disease which I have been considering; a confirmation of this opinion is derived from the circumstance of the alterations in question existing in both shoulder-joints.

Mr. Barron has described three specimens of chronic rheumatic arthritis of the shoulder in the London Medical Gazette, but has assigned external injury as the cause of the alterations which were observed. In each of the three, he found that the tendon of the long head of the biceps was detached from the glenoid cavity, and adherent to the summit of the bicipital groove. In every instance there was some irregularity on the upper part of the glenoid cavity, where the tendon should have been attached; in one case, a part of the adjoining cartilage had been absorbed, while in the other two, the cartilage was removed from the head of the humerus. The absence of any other diseased appearance, he considers as evidence that the detachment of the tendon was the result of accident, and not of any morbid process. He has described the specimens under the name of "a peculiar formation of the biceps muscle," rather a singular title by which to designate a disease of the scapulo-humeral articulation[a].

Dr. Knox of Edinburgh was one of the first to notice the abnormal states of the intra-articular portion of the tendon of the biceps muscle. In one case, he found that the tendon ceased at the top of the bicipital groove, to the margins of which it adhered; a few fibres, looking like cellular threads, could be with difficulty traced, adhering to, and almost identified with, the internal surface of the capsular ligament. In three other cases the tendon had more or less disappeared; in one, altogether; and in another, the altered state of the tendon existed in both joints. From Dr. Knox's remarks, however, it does not very clearly appear, whether he considered these abnormal conditions of the tendon as the results of disease or injury; he merely observes, that injuries done to the intra-capsular portion of the tendon are exceedingly rare[b].

Mr. Stanley, also, many years ago, published an account of three specimens, in two of which he found the tendon of the biceps separated from the glenoid cavity, and adherent to the bicipital groove, while in the third it was displaced, and lay upon the great tuberosity of the humerus. "It may be a question," Mr. Stanley observes, "whether in these instances of

[a] Vol. xx. [b] London Medical Gazette, vol. i.

rupture and displacement of the tendon of the biceps, there had been a dislocation of the head of the humerus"[a].

When, however, I reflect upon the extreme rarity of rupture of the tendon in question, in any variety of luxation of the shoulder, and also upon the important fact, that the previous history connected with the specimens described both by Dr. Knox and Mr. Stanley, was totally unknown,—I cannot avoid adding these to the already extended series of cases of chronic rheumatic arthritis of the shoulder, in which the abnormal conditions of the joint were supposed to have resulted from accidental luxation, or other external injury. "The statement," as Mr. Adams has observed, "made in the report of various cases in surgical works, and in the catalogues of museums, in which we find it briefly noted, that the tendon of the biceps was found ruptured, has been made by the writers confessedly without any knowledge of the previous history of the case, the anatomical characters of which they are describing. On this account, we feel the less delicacy, after long and patient consideration of the subject, in expressing our conviction that the tendon of the biceps, in the numerous cases published, was not (as supposed to be) ruptured by accident, but absorbed as the result of disease."

To the preceding catalogue of examples of chronic rheumatic arthritis of the shoulder-joint, which, as it appears to me, have been described under the various erroneous appellations of:—Partial luxation of the head of the humerus; rupture of the tendon of the biceps; dislocation of the tendon from its groove; peculiar formation of the biceps muscle, &c.;—must be added those which have been recorded by Sandifort, Cooper, Hargrave, Soden, and Callaway. It is unnecessary, however, to enter into a full consideration of these cases, as this has already been done to a great extent by Mr. Adams in the valuable memoir to which I have repeatedly had occasion to allude. It will be sufficient to mention here the principal circumstances which demonstrate, that in every one of the instances to which I have just alluded, the various conditions described are to be referred, to the effects of disease, and that accident (whenever such was known to have occurred) is only to be looked upon, as Mr. Adams has observed, when commenting upon Mr. Soden's case, as the immediate exciting cause of the development of a local disease, a predisposition to which had already existed in the constitution.

In the case recorded by Sandifort, as an example of partial

[a] London Medical Gazette, vol. iii.

luxation of the head of the humerus from external injury, there existed a new articulating surface, formed partly upon the upper portion of the glenoid cavity, and partly upon the root of the coracoid process of the scapula. It was here and there porous, but for the most part covered with a dense, polished, ivory-like substance. The head of the humerus was enlarged, and its summit was in contact with the under surface of the acromion, coraco-acromial arch, and acromial end of the clavicle. The upper part of the greater tubercle had also suffered from attrition. No mention has been made of the state of the capsular ligament, or of the tendon of the biceps muscle[a].

In another case, described by the same author, the acromio-clavicular articulation was enlarged, and the acromion process divided into two portions.

The specimen described in Sir Astley Cooper's work is so familiar to the profession, and so generally quoted by surgical writers, that it is quite unnecessary to reprint it upon the present occasion. I may, however, remark, that it is much more extensively known as an instance of what it is not, than as an example of what it really is. It is this case which is always adduced in support of their doctrine, by those who maintain the possibility of the occurrence of such an accident, as partial luxation of the head of the humerus upon the outer side of the coracoid process.

Many years have elapsed since the publication of the great work of Sir Astley Cooper, and numerous and valuable are the memoirs and essays that have, since that time, appeared upon the injuries of the shoulder-joint; but in almost every one of these treatises, whenever mention has been made of this specimen (found accidentally in the dissecting room, and of the previous history of which all are ignorant), it has been referred to as an undoubted example of the effects of external injury, and as affording satisfactory confirmation of an opinion, the correctness of which is highly improbable, namely, that it is possible for the smooth and lubricated surface of the globular head of the humerus to rest permanently upon the margin of the glenoid cavity. And yet the real nature of the case recorded by Sir Astley Cooper, and its true pathology, have been, upon several occasions, clearly demonstrated, and brought prominently before the profession by Mr. Adams, as, for instance, in his observations upon the subject made to the British Association in 1836[b], in his memoir upon the "Abnormal Condi-

[a] Museum Anatomicum, vol. iv. tab. cli.
[b] See Athenæum, September 10th, 1836.

tion of the Shoulder-Joint," published in 1849[a], and in his numerous communications made to the Pathological Society of Dublin, and recorded in the volumes of both Series of this Journal. But when an erroneous opinion, pronounced by an eminent and justly distinguished author, once becomes generally diffused, it frequently happens that years must elapse before it is overthrown, and truth established in its place.

I cannot better express my own opinions upon the case in question, than by quoting the observations made upon it by Mr. Adams. This eminent surgeon, in the article already so often referred to, remarks:—"The foregoing dissection, which is illustrated by an engraving in Sir A. Cooper's work on Fractures and Dislocations, should not, in our opinion, be considered in any other light than as an excellent specimen of the anatomical appearances to be found in those who have had chronic rheumatic arthritis of the shoulder-joint, for we consider that these appearances were not the result of an accidental luxation, but the true effects of this slow chronic disease. If Sir A. Cooper had known anything of the history of the case during life, we might hesitate to call in question the opinion of so eminent an authority on such a subject; but as the only grounds he possessed for forming any opinion were derived from the mere anatomical appearances observed in the shoulder-joint of the subject in the dissecting-room, we conceive that every one who studies the report of this dissection, accompanied as it is by an engraving, is at liberty to draw his own conclusion as to what was the real nature of the case; and to us it seems quite clear that the appearances observed in the examination of the case referred to by Sir A. Cooper were exactly those most frequently found to be the result of chronic rheumatic arthritis as it affects the shoulder-joint. The new form assumed by the head of the humerus; the fact of the cartilage having been removed, and its place supplied by an ivory enamel—the piece of cartilage which hung loosely into the cavity being connected with the synovial membrane, at the upper part only, by two or three small membranous bands; the attachment of the capsular ligament to the coracoid process; all these circumstances, related in the above-mentioned case, strongly remind us of what we now know to be characteristic marks of the disease we have denominated chronic rheumatic arthritis, as we have so often met with them." "On the other hand, such appearances afford no evidence whatever that an accidental luxation was the cause of them: certain it is that appearances, exactly similar to those

[a] Todd's Cyclopædia, vol. iv.

described in Sir A. Cooper's case, have been met with in cases in which their causes could not be attributed to accident, because no injury had been received; while in others, it was useless to refer to accident, inasmuch as the morbid action had similarly affected *both shoulder-joints*, so that, by the dissection of such cases, we have convinced ourselves that *disease, not accident*, was the source of the morbid appearances." "Sir A. Cooper, in our opinion, somewhat *gratuitously* supposes that his specimen was the much sought-for example of the anatomy of the accident called partial luxation. We say *gratuitously*, because the previous history of the case he alludes to was unknown, and the accident *supposed* to have occurred."

With respect to the long head of the biceps, it is stated that it seemed to have been ruptured near its origin, for at this part the tendon was very small, and had the appearance of being a new formation. Those who have studied the pathology of the disease in question will, I imagine, infer from this statement, not that the tendon had been ruptured and became re-united, but that it was in that atrophied condition which is so frequently observed preceding its complete disintegration and removal.

Before leaving the consideration of this case, it should be stated, that even Mr. Bransby Cooper, so devoted a follower of the doctrine taught by his distinguished relative, has expressed his belief that partial dislocations of the shoulder are, in general, the results of disease of the articulation[a].

In Mr. Hargrave's case[b], recorded as one of partial luxation of the head of the humerus inwards, the result of accident (but the history of which is unknown), I may refer to the following circumstances, as constituting sufficient evidence that the appearances which he has described originated in chronic rheumatic arthritis, viz., the loss of the intra-articular portion of the tendon of the biceps muscle; the adhesion of the remainder of it to the bicipital groove of the humerus; the disappearance of the glenoid ligament; the existence of foreign bodies and osseous vegetations; the removal of the articular cartilages; the formation of the ivory deposit; the enlargement of the head of the humerus; the coracoid process having become articular; and the existence of chronic rheumatic arthritis in the corresponding acromio-clavicular articulation, a circumstance to which Mr. Hargrave has not alluded.

It is unnecessary, upon the present occasion, to give even an abstract of Mr. Soden's case[c], as it has appeared in the pages

[a] Lectures on Surgery. [b] Edinburgh Medical and Surgical Journal, 1837.
[c] Medico-Chirurgical Transactions, 1841.

of the former Series of this Journal, among the Proceedings of the Pathological Society of Dublin, where it has been made the subject of close investigation, and where it has been clearly demonstrated, that the fall alluded to in the history of the case had only this much to do with the partial displacement upwards of the head of the humerus which succeeded to it, that this accident became the starting-point of an inflammatory action of a rheumatic character, under the influence of which the head of the humerus became elevated to the acromion process, and the tendon of the biceps displaced; just as in the case of the comedian, Mathews (detailed by Mr. Snow Harris, at the meeting of the British Association in Dublin, in 1836), where a fall became the exciting cause of the development of chronic rheumatic arthritis of the hip-joint, giving rise to appearances which were supposed to indicate that an intra-capsular fracture of the neck of the femur had been produced, and had become united by bone.

I cannot, however, pass on without expressing my regret that, in several of the systematic treatises upon surgery that have recently appeared, in which Mr. Soden's case has been mentioned, no allusion whatever has been made to the elaborate analysis of it published in the Cyclopædia of Anatomy and Physiology[a],—I allude more especially to the works of Professors Ferguson and Pirrie, both of whom have noticed the case in question as an example of what Mr. Soden termed it, without appearing to be at all aware that any doubt has ever been thrown upon it. Referring the reader, then, to the analysis above mentioned for a complete refutation of Mr. Soden's view of his own case, I shall briefly detail the particulars of an analogous instance, of which I gave a full account at a meeting of the Surgical Society of Ireland in the year 1840.

The patient, an elderly female, had for many years suffered from chronic rheumatic arthritis of the right shoulder-joint, in consequence of which the head of the humerus became gradually displaced upwards, until at length it passed the level of the coracoid and acromion processes: it was also drawn forwards, so that the coracoid process was obscured, the infra-clavicular space increased in depth, and the posterior region of the joint much flattened. In Plate I., Figures 3 and 4 represent the right and left shoulders of this patient, and show a remarkable contrast in the external appearance of the two joints.

Upon examining the affected articulation after death, the

[a] *Loc. cit.*

capsular ligament was found enlarged, and almost as thin as synovial membrane; superiorly it was altogether deficient. The tendon of the biceps was perfect as to structure, but crossed the inner instead of the upper surface of the head of the humerus, the cartilage of which was abraded, and osseous deposits had taken place near the bicipital groove, and around the margin of the head of the bone. The acromion was thinner than natural, excavated upon its inferior surface, and at a distance of half an inch from its anterior extremity, divided into two portions, which were only connected to each other by the fibrous structure which invests the upper surface of the process.

In the case of Charles Mailly, recorded by Mr. Adams, the partial displacement of the head of the humerus upwards, with dislocation of the tendon of the biceps inwards, was found in *both* shoulder-joints.

Sir Philip Crampton has lately informed me that he has had under his care, for a considerable period, a patient labouring under this chronic rheumatic disease of the shoulder: he has watched the case from its commencement, before there was any deformity of the articulation, and has been able to observe the gradual elevation of the head of the humerus, the summit of which is now placed above the level of the acromion.

In 1849 a dissertation was published by Mr. Callaway upon "Dislocations and Fractures of the Clavicle and Shoulder-joint," being the Jacksonian Prize Essay for the year 1846. In this work, a separate chapter is devoted to the consideration of injuries of the long tendon of the biceps muscle, in which the author notices the different cases to which I have referred, but looks upon them as examples either of rupture or dislocation of the tendon, produced by external injury. As I have already expressed my opinion respecting these cases, it is unnecessary to allude particularly to Mr. Callaway's observations; it is, however, to be regretted, that in a treatise otherwise meritorious, so erroneous a view should have been adopted with regard to the nature of the morbid appearances in the instances in question.

The remarkable elevation of the head of the humerus, to which the name of "partial luxation upwards" has been given, has invariably been ascribed to the destruction or displacement of the tendon of the biceps, not only by those who look upon it as the result of external injury, but also by those who, in my opinion correctly, refer it to the effects of chronic rheumatic arthritis. Mr. Adams, for instance, observes that "the effects of the loss of the tendon of the biceps are such, that the head of the humerus is at once elevated by the deltoid, and kept habi-

tually pressed up against the under surface of the acromion." Mr. Canton, also, in his description of a case of this disease, which he brought under the notice of the Westminster Medical Society, and in which the tendon was divided into four or five slips, remarks, that "this condition of the tendon had permitted the head of the humerus to shift upwards, and thereby to articulate with the under part of the acromion process"[a].

The correctness of this opinion certainly admits of being questioned, and I am inclined to believe that in the cases under consideration, the cause has been mistaken for the effect. I do not mean to say that the accidental rupture or displacement of the tendon of the biceps in a healthy shoulder-joint would not be followed by the elevation of the head of the humerus, but I suspect that in cases of partial luxation upwards, resulting from the rheumatic disease in question, the sequence of events is different from that described by authors.

I believe that in these cases, the elevation of the head of the humerus occurs at a comparatively early period of the disease, and is a gradual process, and that the displacement is not in any instance sudden, as might be expected to happen were it consequent upon the rupture or dislocation of the tendon. It is difficult to say in what it originates, but it is probably to be ascribed to the spastic contraction of the muscles, and their increased irritability under the influence of the rheumatic inflammation.

From the moment when the shoulders (from the cause which I have suggested) begin to be elevated, the tendon of the biceps is put upon the stretch, and pressed against by the head of the humerus, which unceasingly tends to pass still further upwards. When the latter has come into contact with the under surfaces of the acromion, and coraco-acromial arch, the effects of compression, as far as the tendon is concerned, have then reached their utmost limits. In the earlier periods of such cases, the tendon will be found in one or other of two conditions, either displaced from its natural situation, and running over the inner instead of the upper surface of the head of the humerus, or else maintaining its normal position, but presenting alterations of form and structure, which will be found to vary, according to the length of time during which it has been subjected to pressure. At first it becomes flattened and increased in breadth, but at a later period its fibres are separated from one another, and its under surface acquires a corroded appearance[b]. The process of absorption goes on throughout the

[a] London Medical Gazette, 1849, vol. viii. p. 958. [b] See Plate I. Fig. 5.

whole extent of the compressed portion, until at length a complete solution of continuity takes place; and should an opportunity of examining the interior of the joint be afforded at this period, the lower extremity of the tendon will be found to have become adherent either to the capsular ligament or to the bicipital groove, or perhaps to both, while the upper will be seen hanging loose in the articulation. At a still later period, the whole of this superior fragment, in almost every instance, totally disappears.

The displacement of the intra-articular portion of the tendon from its normal course, I believe to be simply owing to its having glided downwards over the globular head of the humerus, to escape, as it were, from the gradually increasing pressure exercised upon it by that process; and I am further of opinion, that when it occurs at all, it happens at a comparatively early period of the disease, and while the head of the humerus still presents a smooth, cartilaginous surface. There is nothing more easy to comprehend than that the undue elevation of this polished ball should cause the equally smooth tendon to glide from its summit. When it has once attained its new position upon the inner surface of the head of the bone, it to a certain extent ceases to be overstretched, and the effects of pressure are but slightly experienced; hence it is that the tendon, thus displaced, may be found in a state of integrity even in cases where the consequences of the long-continued pressure of the head of the humerus upon the other structures of the articulation, and upon the contiguous textures, are seen carried to the utmost.

In the advanced stages of this remarkable affection, should the tendon still continue perfect, the displacement may implicate that portion which, in the normal state, is extra-capsular, but which, in consequence of the singular changes induced by the disease, has now become intra-articular. In such cases the tubercles will be found amalgamated with the head of the bone; the sulcus which here marks the anatomical neck of the humerus being obliterated; the corresponding attachments of the capsule destroyed; and the summit of the bicipital groove filled up. The tubercles and head of the humerus thus become one large articular surface, and the displaced tendon, unless it has become disintegrated, will generally be found crossing that portion of it which corresponds to the lesser tubercle.

That the doctrine which ascribes the elevation of the head of the humerus to the previous loss of the tendon of the biceps is erroneous, or at all events not universally true, appears from the fact, that this partial displacement upwards has been often

observed in cases where, after death, the tendon was found occupying its natural position, and without any solution of continuity. In the case to which Plate III. refers, the patient laboured under the disease in both shoulder-joints for several years before her death, but the affection had been established in the right articulation long before the left was attacked. Upon each side, the head of the humerus had become prominent and elevated much above its natural position.

When the deltoid muscle was removed upon the left side, the capsule was found to be entire, with the exception of a small aperture, corresponding to the insertion of the supraspinatus muscle, the tendon of which was unravelled in its texture, and evidently undergoing that peculiar alteration which precedes the loss of its attachment to the bone. The head of the humerus (with the intervention of the capsule) was pressed closely against the under surface of the acromion, which process, about three-quarters of an inch from its extremity, was divided into two portions, separated fully half an inch from each other, the fibrous structure which connected their upper surfaces having suffered a corresponding amount of elongation. The detached portion, along with the extremity of the clavicle, was also pushed upwards above the level of the remainder of the process. There was no complete solution of continuity in the tendon of the biceps; it still adhered above to the glenoid ligament, but it was greatly on the stretch, and its inferior surface[a], throughout the greater part of the intra-articular division of its course, presented a corroded appearance, and its fibres were unravelled and separated from one another. It was not displaced: it crossed the summit of the humerus in the usual situation and direction.

It is manifest that here, at all events, the displacement of the head of the humerus upwards upon the left side was not due to any cause having reference to external violence, for there was neither rupture nor luxation of the tendon, nor laceration of the capsular ligament.

In the opposite shoulder[b] the disease was further advanced, and the elevation of the head of the bone more remarkable. When the capsule was exposed, it was found to have acquired several abnormal adhesions. Its normal attachment to the superior part of the glenoid cavity seemed to have been transferred, as it were, to the acromion, clavicle, and coracoid process, and to have become identified with the coraco-acromial ligament, which could no longer be distinguished as

[a] See Plate 1. Fig. 5.

[b] See Plate III.

such. The capsule was thin and atrophied, and in many places as translucent as if it had been composed merely of synovial membrane. It was distended by a viscid synovial fluid, and its interior presented some very remarkable appearances. Besides numerous clusters of exceedingly vascular fimbriæ, suspended by delicate pedicles from its inferior portion, vast numbers of tendinous-looking fibres were seen converging towards the tubercles of the humerus; upon close examination they were found to be those of the tendons of the capsular muscles, separated from one another, flattened and expanded. They terminated at different distances from the tubercles, and there existed no vestige of the insertion of any of the capsular muscles into these processes, which had become articular. In the upper part of this abnormal capsule there were several thin, concave plates of bone, the under surfaces of which were in contact with the head of the humerus, and resembled polished ivory. The tendon of the biceps was adherent to the lower part of the bicipital groove, and to the adjoining portions of the capsular ligament, the entire of its intra-articular portion having disappeared.

It was, however, in the osseous fabric of the joint that the most singular deviations from the normal state were observed. About three-quarters of an inch of the extremity of the acromion had altogether disappeared, and a broad, thick, concave plate of bone passed downwards from the shortened process, and became perfectly continuous with the upper and outer part of the margin of the glenoid cavity, which thus appeared as if a coracoid process had sprung from its external side. The acromial extremity of the clavicle was enlarged, excavated upon its under surface, and polished by the attrition of the head of the humerus; it was distant from the acromion fully three-quarters of an inch, but connected to it by an exceedingly dense fibrous tissue, which constituted the highest part of the capsule. The superior part of the enlarged glenoid cavity presented an enamelled surface, but its inferior portion was still covered by the cartilage of incrustation. There was no trace of the glenoid ligament. The head of the humerus was enlarged, irregular in form, destitute of cartilage, and polished, and the tubercles, which were studded with osseous granules, had become continuous with its articular surface, and also with each other, the commencement of the bicipital groove having been obliterated. This specimen furnishes the only example I have ever seen of the formation of an osseous plate connecting the glenoid cavity with the acromion, but there is a preparation, somewhat similar in other respects, contained in the Mu-

seum of the Royal College of Surgeons in Ireland[a]. Although the circumstance has not been alluded to by the author of the Catalogue, yet we have the authority of Mr. Adams for stating that in this instance, "the acromial end of the clavicle is unsupported, and that the acromion process has been removed for the amount of an inch in extent"[b].

In the case which I have described above, I think it highly probable that the removal by absorption of the extremity of the acromion upon the right side had been preceded by the solution of continuity of that process, so often seen in this rheumatic disease, and which actually existed in the opposite shoulder; and I have been influenced in forming this opinion, not so much by the fact of this lesion of the bone being so often symmetrical, as by the circumstance, that the length of the spine of the right scapula, measured to the end of the shortened acromion, was precisely equal to that of the left, measured to the situation of that remarkable lesion which has been in so many instances mistaken for fracture caused by external violence.

I may here observe, that in cases of displacement of the head of the humerus upwards resulting from the disease under consideration, the lower portion of the glenoid cavity is frequently found covered by its cartilage, the ivory deposit existing above; and that the vertical extent of surface thus invested by cartilage may be taken as a measure of the amount of displacement.

Among all the numerous and varied phenomena which occur during the progress of chronic rheumatic arthritis of the shoulder, there is none more remarkable, nor one for which it is more difficult to offer any satisfactory explanation, than the detachment of the extremity of the acromion process. It is most frequently to be noticed in the advanced stages of the disease, but I have more than once seen it at a period prior to the destruction of the tendon of the biceps; it is in many instances symmetrical, and in general occurs where in early life the epiphysis joined the remainder of the process. I have, however, in one instance found the entire of the acromion thus separated from the spine of the scapula. It may co-exist either with hypertrophy or atrophy of the acromion; it may occur with or without perforation of the capsular ligament; or with absorption in some instances, and displacement in others,

[a] Catalogue, vol. ii. p. 397, E. b. 901.
[b] *Loc. cit.* p. 588. See also Cruveilhier, liv. ix.

of the tendon of the biceps, or finally in cases where the tendon is perfect as to structure and normal as to position.

"In many cases," says Mr. Adams, "in which the shoulder-joint has long been the seat of this chronic disease, the acromion process has been found traversed in the line of junction of its epiphysis, by a complete interruption of its continuity, as if fractured; we say, as if fractured, for we are convinced that this solution of continuity of the acromion process is not really a fracture produced by external violence, but a lesion, which so frequently exists in combination with chronic rheumatic arthitis of the shoulder, that we are compelled to look upon it, in these cases, as a peculiar organic change, the result of chronic rheumatic disease. We do not pretend to account for the separation of the acromion process into two portions, nor can we say why it is that the division usually occurs in the original line of the epiphysis, particularly at the late period of life at which we generally witness this phenomenon. In some of these cases we have found the acromion in a state of hypertrophy; in others in a state of atrophy; but in no case did there seem to be any attempt at ossific deposition on the contiguous surfaces of the separated portions of the acromion, a circumstance which might be expected if a fracture had occurred"[a].

By those who have not made the subject of chronic rheumatic arthritis a special object of their study, it might be supposed that the singular solution of continuity of the osseous tissue, such as that to which I have been alluding, was only to be met with in the acromion process. This, however, is far from being the case, for I have seen half of an hypertrophied olecranon thus separated from the shaft of the ulna, in an aggravated case of this disease affecting the elbow-joint, and in several instances of chronic rheumatic arthritis engaging the articulation of the knee, which are preserved in the Museum of the Richmond Hospital, large portions of the condyles and head of the tibia may be seen separated from the remainder of the bone. In one of these examples the detached mass is of such a size as to embrace the insertion of the ligament of the patella.

Independently of the absence of ossific deposit, or of any attempt at reparation, there are two remarkable circumstances to be observed in these cases, namely, that the detached portion is never at once separated from the rest of the process, what-

[a] *Loc. cit.* p. 587.

ever may be the particular bone concerned; nor is the fibrous tissue investing the external or subcutaneous surface of the process ever torn: conditions which might be expected to be present (in the case of the olecranon at all events), if the phenomenon in question was the result of external violence. On the contrary, the two portions remain in contact, frequently so close and perfect that a careful examination may be required before the exact seat of the interruption of continuity can be discovered; and hence it has several times occurred to me to find this *apparent* fracture of the acromion, in specimens of this rheumatic affection of the shoulder, preserved in different museums: although in the printed description of such no mention had been made of anything abnormal in the condition of that process.

It should also be recollected, that when the acromion is broken by external violence, the shoulder droops, and the detached portion of the process sinks along with it, but when the solution of continuity is the result of the disease in question, a precisely opposite condition is frequently observed, the separated portion being pushed by the elevated head of the humerus above the level of the rest of the process.

It is true that, at a period more or less remote, the detached portion may become widely separated from the rest of the acromion[a], but this has been gradually accomplished by the continued pressure of the head of the humerus, stretching and elongating the fibrous structure, which naturally invests the superior surface of the process.

It would appear from the analytical investigations conducted by Mr. Harper, and recorded by Mr. Canton, that in this rheumatic disease of the shoulder a large proportion of the earthy matter naturally existing in the bone is removed; but I scarcely deem the knowledge of this fact adequate, of itself, to account for the solution of continuity in the acromion; and it appears to me that, in our endeavours to explain this remarkable phenomenon, we can at present only go so far as to suppose that, under the influence of this specific arthritic inflammation, the intimate structure of the bones undergoes some peculiar molecular alteration, the exact nature of which is as yet hidden from us, but the effects of which are to diminish its cohesive power, and to render it liable to yield to a pressure, which, though perhaps not powerful, is unceasingly exerted upon it. In many of these cases I have found the affected bones soft, porous, and spongy: these conditions in some instances co-ex-

[a] See Plate II.

isting with increase of volume, constituting that state of the osseous tissue which Lobstein has described under the title of "Osteoporosis"[a].

A long and careful consideration of the subjects discussed in the preceding pages leads me to believe, that the occurrence of partial dislocation of the head of the humerus upwards, as an immediate result of rupture or displacement of the tendon of the biceps muscle from accidental violence, has not been anatomically demonstrated; that all the cases accompanied by dissections, that have hitherto been published, as examples of the luxation in question, resulting from injuries to the tendon, have, in reality, been instances of the effects of chronic rheumatic arthritis; and that the morbid conditions, which in them have been regarded as affording the clearest evidence of the joint, having at some former period suffered from external violence, are among the most constant effects of this disease. "Notwithstanding all these lesions, namely, the total disappearance of the articular part of the tendon of the biceps; the perforation of the superior part of the capsular ligament by the head of humerus and the separation into two portions of the acromion process,—we feel convinced that all these phenomnea combined should by no means be considered as proof of any accident having occurred to produce them; but, on the contrary, should be looked upon as the usual results of chronic rheumatic arthritis of the shoulder"[b].

Art. XV.—*Reports of Rare Cases observed in the Clinical Wards of the Whitworth and Hardwicke Hospitals.* By Samuel Gordon, M. B., F. R. C. S. I., M. R. I. A., Physician to the Hospitals.

I.—*Internal Strangulation of the Small Intestine, produced by a diverticulum of the Ilium, which had become adherent to the Anterior Wall of the Abdomen; Peritonitis; Death.*

As long as the question remains undetermined as to the propriety of the operation of gastrotomy in cases of internal strangulation of any portion of the intestinal canal, or of its peritoneal appendages, the record of any such case which has been closely observed must be considered more or less valuable. With this view I am induced to publish the follow-

[a] Traité d' Anatomie Pathologique, tom. ii.
[b] Cyclopædia of Anatomy, *loc. cit.*

ing:—A labourer, a remarkably powerful, tall, muscular man, forty-six years of age, was admitted into the Whitworth Hospital, on the 20th of February, 1853. It was scarcely necessary to ask a question, or to make any manual examination, in order to be satisfied that he was labouring under peritoneal inflammation, so peculiar was his position and his aspect. He lay on his back, with his knees drawn up, and his head and shoulders very slightly raised. His face had a livid pallor; his features remarkably collapsed, but expressive of great anxiety; his eyes sunken and dull, surrounded with a marked bluish circle; the intellectual and sensorial faculties perfect. His pulse was very rapid, 132, exceedingly small and compressible; his hands cold and blue. The abdomen was remarkably tense and resisting; all the lower part had a peculiar doughy feel, but without any sense of fluctuation anywhere; the upper part was loudly tympanitic. As he lay quiet, he had no pain even on manipulation, unless deep pressure was made; it was then confined entirely to the right iliac region and to the umbilicus, and described as a dragging sensation rather than pain. This was, however, much increased by any movement, and he showed the greatest disinclination to the slightest effort. He followed with his eyes, without the least motion of his head, all our movements around his bed, and disliked even to raise his arm, to allow of the radial pulse being examined.

In addition to the above symptoms, he had obstinate constipation of the bowels, and constant vomiting of yellow fœcal matter. He had also an incessant desire to go to stool, with tenesmus, but could not succeed in voiding anything.

The history which he gave of his illness was, that he was working until the 14th, one week before his admission. His bowels were freely moved on the 13th, but were not moved on the 14th, on which night he was attacked with pain in the abdomen, not, however, very severe, nor attended with collapse or nausea, but he felt a gradual swelling or increasing sense of fulness spreading through the abdomen. On the 16th he was attacked with vomiting, which, he says, was at first excessively bitter; and on the following night assumed the characters it had on his admission. It was then of a yellow colour, of a distinctly feculent odour, and of a most disgusting taste. Seven days had now elapsed without any evacuation having taken place *per anum*, except, as his brother described it, like the droppings of a hare.

With the above collection of symptoms and such history, although the tongue was clean and moist, and he was passing

urine rather abundantly, there was but little doubt that we had to deal with a peritoneal inflammation, which was consequent on an interruption of the intestinal canal, from intus-susception or other internal cause, there being no external tumour or other evidence of hernia.

I was at once forcibly reminded of the cases collected by Mr. Phillips, and published by him in the Medico-Chirurgical Transactions, and of others in which gastrotomy is so strongly recommended; but however anxious I might have been to open the cavity of the abdomen and remove the obstruction, the collapsed condition of the patient, the extreme weakness and intermission of the pulse, but above all, the great coldness of the skin, did not, I considered, warrant any surgical interference; I therefore directed my principal line of treatment towards the peritoneal inflammation, and ordered him a drachm of calomel and a grain of opium, to be divided into sixteen pills, one to be given every two hours, and the other usual means for bringing the system rapidly under the influence of mercury to be employed. The abdomen to be constantly fomented with warm and stimulating fomentations, and the tenesmus to be obviated by occasional enemata of warm water. The system to be supported by small doses of warm wine and water.

The following day he seemed rather better. The vomiting was relieved; the pain, on pressure over the abdomen, was not increased: his brother, who remained constantly with him, said that he had passed from his bowels "a soft substance like a piece of gut." This substance, unfortunately, I could not see; nor could I, nor my resident pupil, Mr. Kidd, although we made every exertion, obtain any clear account of it, and I am now satisfied there must have been some mistake in the matter. It was sufficient, however, at the time to modify, in a measure, both the prognosis and diagnosis; for while hitherto the symptoms which existed, coupled with absence of diarrhœa, or any discharge of blood or mucus *per anum*, indicated, in my opinion, rather internal strangulation of some portion of the intestine, and so rendered the prognosis most unfavourable—(there being, I believe, no case of recovery under such circumstances recorded in the annals of medicine, unless the constriction were removed);—the discharge of such a substance as described would, under the circumstances, have been rather a favourable symptom, reminding us of the preparation placed by Sir A. Cooper in Guy's Hospital Museum, and in which, in a case of intus-susception of the small intestines, coagulable lymph was effused, which had formed an accurate mould of the intestine;

and also of Baillie's case, and many others, in which the invaginated portion had sloughed away and left the canal of the intestine pervious as before, its length only being reduced by the part which had been separated. The only complaint which he made on this day was of tightness of his chest and difficulty of breathing,—of this he was complaining more or less since his admission. The vomiting or gulping up of fluid in large quantities was not so continuous. This remarkable remission of the symptoms, which Rokitansky dwells on as part of the history of this affection, was not of long continuance, for he died not many hours after the morning visit.

Post-mortem.—On opening the cavity of the abdomen the very great distention of part of the small intestine was most remarkable,—it was also exceedingly vascular, presenting a most beautifully arborescent appearance; on turning aside this distended portion, and examining the right iliac fossa, we found, lying deep in it, another portion of small intestine perfectly collapsed, and forming a very remarkable contrast with the distended portion by its greatly reduced caliber, being not thicker than the intestine of an infant. This portion was of various shades of colour, from dark purple to a light red. There was no soft lymph or purulent matter in the cavity of the peritoneum; the anatomical evidences of peritonitis were confined to the vascularity of the serous membrane, which was, in some parts, so intense as to seem almost gangrenous; there was also remarkable dryness of the serous membrane, which had in several places a punctated appearance; the intestines were, in some places, very slightly agglutinated, and when they were separated the peritoneum appeared to be somewhat thickened along the line of adhesion. A large portion of small intestine was found strangulated by a diverticulum, the course of which it will be advisable to trace in order to explain the nature of the strangulation. It came off from the ileum about eighteen inches from the cæcum, exactly opposite to the attachment of the mesentery, being at its commencement large enough to admit the middle finger; it immediately turned over the ileum, and, first passing in front of a large loop, or double fold of intestine and corresponding mesentery, completely encircled it near its junction with the cæcum, appearing, however, to press much more on the mesentery than on the intestine; it then again crossed the ileum, and after closely constricting it, about five inches from where the diverticulum itself was given off, passed upwards and forwards, to be firmly united by strong bands of organized membrane to the anterior wall of the abdo-

men, about the junction of the right iliac and hypogastric regions. Thus it twice passed over the front of the mesentery, forming three strictures; the first two points of stricture included about five inches of intestine; one of these two points was not complete, for the diverticulum, coming off from the side of the ileum, and passing in front of it (where the line of pressure was well marked by the greatly thickened peritoneum), the posterior wall was almost completely free; consequently this portion of intestine, although reduced in caliber, and of a dark colour, did not present appearances of constriction in the same degree as the succeeding portion, which, as was said above, was not larger than the intestine of an infant, was of a very dark colour, which became at each point of stricture,—but more particularly at the lower, or that near the valve,—a rich purple. On opening this portion of intestine it was found to contain only mucus; the internal coat was greatly congested, and close to the valve the colour was almost as deep as that of the serous membrane. The diverticulum, seven inches and a half long, was greatly narrowed in the centre, where it appeared like a fibrous cord passing round the intestine; at its termination it again became considerably dilated; it contained only mucus. The mucous membrane of the stomach was softened, and presented several minute bloody spots; it contained a large quantity of thin slimy mucus. The distended portion of small intestine contained a great quantity of yellow fœcal matter, exactly similar to what had been so frequently vomited during life. The collapsed portion was perfectly empty. The large intestine was greatly reduced in size, and contained a small quantity of hard scybalæ.

I examined the contents of the thorax to seek for some cause for the great dyspnœa, beyond the pressure upwards of the diaphragm, which the distended abdomen gave rise to, and I found that both lungs presented a well-marked example of interlobular emphysema. That this emphysema was not chronic, but was in some way the effect or concomitant of the intestinal strangulation, I conjectured from the fact, that although the emphysema was extreme, neither the mucous membrane nor any other portion of the bronchial tubes had undergone any alteration, but was perfectly healthy.

Strangulation of a portion of the intestinal canal by means of a diverticulum—although the rarest form of internal strangulation—has been met with not unfrequently; it may occur with the end of the diverticulum remaining free, of which there is a remarkable example in the Museum of the College of Sur-

geons, presented by Dr. Cusack[a]; or with the inferior extremity forming an attachment to some portion of the peritoneum, as in the present instance, and in similar cases recorded by Rayer[b], Hutton[c], and others.

This patient appears to have died rather of nervous exhaustion than from either peritonitis or gangrene of the intestine: although the intestine was of a very dark colour, it was not much softened or very readily torn, as is the case in gangrene; and the amount of peritoneal inflammation was very limited. It is generally considered that the rapidity of such cases is in proportion to the narrowness of the stricture: the great muscular strength and previous rude health of this patient may have been the reason why he survived for ten days with two points of the small intestine so compressed as to prevent even the passage of air through either of them.

The amount of peritoneal inflammation, however, does not appear to be in any way connected with the condition of the stricture. We are not, I think, as yet aware of the causes why the amount and nature of the peritoneal inflammation should be so variable in case of strangulation of portions of the intestinal canal—our knowledge is at least of a negative kind. It certainly does not depend on the duration of the disease. We know that death sometimes occurs, and the peritoneum presents no appearances of inflammation. In 1848, Dr. Montgomery exhibited to the Pathological Society a specimen of intus-susception in a child, in which "upon an examination of the parts after death he could not discover the slightest appearance of any inflammation having existed," although decided symptoms of internal strangulation had been present for three days. In a case of intus-susception which was exhibited to the London Pathological Society by Dr. O. Ward, and from which the patient died on the seventh day, "the peritoneum did not appear to have been inflamed."

On the other hand, however, we read that "the small intestines were much inflamed, and matted together by moderately firm lymph, in a case of internal strangulation which died on the sixth day[d]; and in Dr. Cusack's case, already referred to, although death took place in less than forty-eight hours from the commencement of the attack, there was lymph and

[a] Catalogue of the Museum of the Royal College of Surgeons of Ireland, vol. ii. p. 71.

[b] Archives Générales de Médecine, tom. v. p. 68.

[c] Dublin Pathological Reports, vol. ii. p. 32.

[d] Dr. Peacock, London Pathological Transactions, vol. i. p. 97.

even purulent matter effused into the cavity of the peritoneum[a].

Neither does the amount of peritoneal inflammation depend upon the age or strength of the patient; we often find the greatest amount of inflammation in the weakest person, and in the present instance we see, in a powerfully strong man after ten days' illness, at least great want of the usual appearances of peritonitis.

Although the peritoneal inflammation in general commences at the stricture, and spreads from thence through the remainder of the abdomen, we sometimes find, that while we have in the exudation of lymph, and even purulent matter, evidences of most acute inflammation through the remainder of the peritoneal cavity, these appearances are completely wanting around the stricture, where altogether a different kind of action is progressing. This was very well marked in a preparation placed by Professor Harrison in the College of Surgeons Museum[b]; and in others which I have witnessed, and in the present instance, there was no appearance whatever of lymphy exudation near the stricture, while two coils of the distended intestine were evidently about to be united.

II.—*Plastic Bronchitis of the small Bronchial Tubes, with effusion of Lymph into the Air-Cells of the Lung.*

The disease known as *plastic bronchitis*, or *pseudo-membranous bronchitis*, in what we may term its sthenic form, and affecting principally the larger bronchial tubes, has been very fully described, at least as far as its general symptoms and anatomical appearances are concerned; nor are we altogether without information on the more asthenic form of the disease affecting also the more minute bronchial tubes, and passing even into the terminal vesicles of the lungs. We find this form noticed by Dr. Stokes, in the year 1833; it has been also observed by Louis, Reynaud, and others, and appears to have prevailed in Paris as an epidemic in the year 1837, of which Caseaux and Nonat have left an interesting account. I have lately met with some cases of this affection in the Whitworth and Hardwicke Hospitals, and as I feel we still require information on several points connected with so formidable a disease, I have thought that the details of a few of them might not be without interest.

[a] Although this does not appear in the Catalogue, yet I make this statement on the authority of Dr. Fleming and others, who were present at the examination, which at the time created great interest.

[b] Catalogue Museum Royal College of Surgeons of Ireland, vol. ii. p. 75.

Case I.—A waiter from Gresham's Hotel, who had long been under observation for cirrhosis of the right lung, was admitted into hospital, on the 14th of January, with anasarca and albuminous urine; his symptoms were considerably alleviated, and he was about to be discharged, when, on the 9th of February, he complained of pain and sense of heat, and fulness in the left side of the chest; loud, sonorous, and sibilous *râles* were audible over the upper half of this side; the phenomena which always existed in the right side were unaltered; his cough was much increased; the expectoration greatly diminished; his skin was very hot, and the pulse frequent. On the same evening he was seized with intense pain in the left side, which was followed by great collapse, from which he never perfectly rallied. On the next morning the pain in the side and collapse still continued, and, though his breathing was most rapid and short, he was pale, and his lips blanched; nor had he the appearance of one suffering from pulmonary obstruction. However, where the evidences of bronchitis existed in the upper half of the left lung, there was now extreme dulness on percussion, and very slight bronchial breathing, no vesicular respiration, and a peculiar modification of resonance of the voice, approaching rather to œgophony than bronchophony. He died during the day. A post-mortem examination revealed the existence of a cavity in the right lung, formed by a dilated bronchial tube, and other evidences of cirrhosis, of which a more detailed account will be given on another occasion. The upper lobe of the left lung was greatly enlarged, and did not in the least collapse; it was perfectly solid, and deeply indented with the marks of the ribs. It was of a grey colour externally; a section of it also showed a grey granite-like appearance; it was remarkably heavy, and immediately sank in water; it was also very tough, not at all friable, nor easily broken; on pressure neither pus, blood, nor mucus, exuded from the surface, but very small particles of lymph protruded from several points, which were the orifices of divided bronchial tubes. These latter were found completely filled with soft, plastic lymph. This effusion was confined altogether to the left lung; it did not exist in the larynx or trachea, or near the root of the bronchial tree, it commenced about the fourth subdivision of the bronchi, was rather loose, and did not completely close up the caliber of the tubes at first, but soon became very adherent, completely filled the bronchial tube, and was traced into the terminal vesicles, from which it could be picked out; with some trouble the lymph could be extracted in large quantity, and preserved its arborescent appearance; the intimate con-

nexion between the lymph in the air vesicles of the lung, and in the adjoining bronchial tube, could be easily demonstrated. When the lymph, which was perfectly solid, was removed, the mucous membrane of the bronchial tube was found of a dark blue colour, and greatly congested; the disease was confined to the upper lobe of the left lung; the pleura was not inflamed.

Case II.—John Fahey, aged 28, was admitted into the Hardwicke Hospital on the 24th of February, 1853. He was of intemperate habits, and, after being exposed to wet and cold, was suddenly seized, on the previous day, with intense pain and stitch in the upper part of the right side; he immediately became so weak that he fainted. His face was exceedingly pale, and his features collapsed; his breathing exceedingly short and hurried; pulse 116, very feeble; still complained of pain in the right side, the upper half of which was perfectly dull on percussion, and there was no vesicular respiration audible; there was considerable resonance of the voice, and, on deep inspiration, some bronchial respiration was audible; physical phenomena same anteriorly and posteriorly; respiration in left lung and lower half of right natural; he had cough, which was almost incessant, but without any expectoration; his skin was intensely hot; six leeches were applied to the right side, and he was ordered to take, every third hour, a pill containing two grains each of blue pill and carbonate of ammonia, and a fourth of a grain of ipecacuanha, and to have twelve ounces of wine. The constitutional symptoms improved greatly; the pulse became much stronger, so that the wine was omitted, but the phenomena in the lung remained unaltered. On the 27th he was again seized with great faintness, and, although stimulants were again freely administered, he never rallied, but died early on the following morning. The upper lobes of the right lung were found, on post-mortem examination, to be perfectly solid, and greatly enlarged, encroaching much on the anterior mediastinum. A section of these lobes showed the air vesicles completely filled with lymph, which could be easily extracted, exhibiting an exact mould of the air vesicles. The small-sized bronchial tubes were also completely filled with the same soft, tenacious lymph, which, as it passed into the larger bronchial tubes, became less tenacious, and encroached less on their caliber. The bronchial mucous membrane was inflamed throughout, but the effusion of lymph was confined to the upper lobes of the left lung. There was no pleuritis.

Case III.—Cusack, a policeman, was admitted into the Hardwicke Hospital, on the 2nd of March; he had been ailing for some days, when he was suddenly seized with great pain in

the right side, and intense dyspnœa. I saw him a few hours after: he had all the appearance of a man suffering from the sudden supervention of pneumothorax; he held his hands on his right side, and kept his body inclined towards it. He was very pale, and complained of great sudden weakness. He could not be induced to draw his breath, so as to allow of auscultation being practised; the lower two-thirds of the right side were quite dull on percussion; it was to this part he referred the pain. The right side was fomented with warm turpentine, and he was ordered a pill every three hours, containing a grain and a half of blue pill, two grains of carbonate of ammonia, and a fourth of a grain each of ipecacuanha and opium, and to have sixteen ounces of wine.

4th. The great pain was relieved, but the pallor and collapse continued; cough incessant; expectorated only frothy mucus. Corresponding to the extent of dulness, which was extreme, there was slight bronchial respiration, and slight bronchophony; the bronchial breathing was heard only on very deep inspiration. The right side was blistered, and the blisters dressed with mercurial ointment, which was also administered by inunction. This plan of treatment was continued until the 7th, when his gums were sore. This was almost immediately followed by copious expectoration, which was of a very peculiar character: it was in consistence and appearance like grains of boiled rice, but most of the particles much smaller, and with this there was also a considerable quantity of mucus. The dulness on percussion still continued, but there was now to be heard in several spots a peculiar flapping valvular sound, which I at once recognised as the *bruit de soupape* observed by Barth and Caseaux. This continued for several days. It frequently happened, that on first examining the patient, it was not audible, but after a fit of coughing, it was always produced and continued; it was audible both in inspiration and expiration. When at length, after six days, this sound disappeared, it was replaced by the sonorous râle. This man recovered perfectly, and was discharged cured March 29th. After the system was affected with mercury, the treatment adopted was expectorants and counter-irritation, and the free administration of wine was continued.

Case IV.—Butler, a policeman, was on duty on Arranquay, on the night of the 23rd of March, when he was suddenly seized with intense pain in the left side of the chest; this was followed by profuse perspiration, and then great debility. He was obliged immediately to go off duty, and was admitted into the Hardwicke Hospital on the following day.

I saw him on the morning of the 25th. He had the appearance of a man suffering from severe hemorrhage; his face was very pale and anxious, and his lips blanched; his dyspnœa was very great; the pain in the left side very severe. The heart was displaced upwards, and to the right side. The lower two-thirds of the left side of the chest were very dull, both anteriorly and posteriorly; there was no respiratory murmur audible over this space; the vocal resonance was increased; in the upper third the respiratory murmur was natural, as was also the percussion sound. This man had also most tiresome cough, and total want of expectoration, until the 29th, when the gums were touched with mercury; he then began to expectorate in very large quantity. On pouring out this expectoration, and pressing it between folds of bibulous paper, the more fluid parts were absorbed, and we were able to demonstrate large masses of lymph, which still remain a most accurate mould of the minute bronchial tubes, and are preserved in their arborescent form. This man is still (April 11) in hospital, recovering but slowly. The anemic appearance and debility continue, although he takes sixteen ounces of wine daily. The dulness on percussion continues, and the *bruit de soupape,* or double flapping sound, is very plain, and is always rendered more evident by coughing.

These cases are all remarkable for the extreme suddenness of the attack, and the violent pain and collapse with which the symptoms set in. I have never seen a pneumothorax or perforation of the stomach announced with more formidable symptoms than those which existed in Price's case, and the rapidity with which the disease runs its entire course is most alarming. I can positively assert that in one case it did not not exceed forty-eight hours; and I imagine that unless the disease can be brought under control within that period, it generally proves fatal. The symptoms seem to be—very great and very sudden oppression of breathing; little pain after the first acute attack, but great sense of weight on the chest; severe harassing cough, and little or no expectoration.

In some cases the ordinary physical signs of bronchitis appear to have existed for some time before those of solidification of the lung; but in others the extreme dulness on percussion appears to have supervened without any previous evidence of bronchitis. This dulness on percussion was always accompanied by total absence of respiration, or very weak bronchial respiration and a modified bronchophony, differing thus widely from the phenomena of the ordinary or even typhoid pneumonia.

I consider the disease to be essentially a morbid product of the bronchial mucous membrane; but that it is connected with the morbid state of the blood is evident from the fact that it is sometimes combined with that terrible disease known as diffuse inflammation. Dr. Stokes has told me of a case of this kind which he saw prove fatal in less than forty-eight hours, about the end of December last; and also that the severity of the symptoms did not appear to bear any proportion to the amount of disease, death having occurred when not more than a third of one lung was affected. It differs from bronchitis ordinary and specific, in that it not merely confines itself to one lung, but that it never engages the entire even of that lung. Sometimes it affects the upper, and sometimes the lower portions of the lung. When the upper lobes of the lung are affected, the diagnosis seems to be comparatively easy; but when the inferior lobe is engaged, it is very liable to be mistaken for pleuritis with effusion, not merely from the early history of the disease, commencing with acute pain and stitch in the side, and then the supervention of dulness on percussion, and corresponding absence of respiration, but also from the fact of displacement of the adjoining viscera. This fact, I believe, I was the first, and as yet the only one, to observe. In the year 1840 Dr. Smith made the dissection, and exhibited to the Pathological Society[a] a specimen of this disease. The details of that case during life were furnished to him by me, I being at the time resident clinical clerk in the Whitworth Hospital, in which the man died. The preparation and accurate drawing are still preserved in the valuable collection of the Richmond Hospital Museum. In my notes of the case I find it entered:—"This is most likely a circumscribed empyema; there is evident enlargement of the right side of the chest, and the anterior mediastinum is filled up. The liver is depressed, but there is a distinct line of clearness at the base of the lung, between the effusion above and the liver." That the lung was actually enlarged, and that these displacements had taken place, the post-mortem examination proved. In the autopsies above detailed the anterior mediastinum was filled up, and in the case of Butler the heart was displaced considerably to the right side, and, as the affection went on to recovery, we were able to trace the return of the heart to its normal situation. In the very early and in the later stages the diagnosis may be easy, but at a certain period of this disease, affecting the inferior lobes of the lung, I know of no

[a] See the former Series of this Journal, vol. xix. p. 122.

means of forming a positive diagnosis between it and pleural effusion, except by the test of position, when, if the pelvis be elevated and the shoulders depressed, the fluid will gravitate towards the cone of the pleura, if the dulness and absence of respiration have been caused by its presence, and these signs of compression or solidification of the lung will no longer exist. In the fact of enlargement of the lung in this disease, we are, perhaps, approaching the solution of the long-contested question, whether in pneumonia the lung is really enlarged or not. The only reasonable proof of enlargement of the lung in pneumonia is, the apparent depression said to be caused by the pressure of the ribs, and this appearance can be easily demonstrated to be produced rather by a thickening and consequent elevation of the intercostal portion of the pulmonary pleura; whereas effusion of lymph into the air-cells of the lung is, according to my experience, always accompanied by enlargement of the lung.

Lobstein's account of the anatomical appearances is very graphic, although he considers the disease as a necessary complication of pneumonia having attained its third stage. He says: "If we open the bronchial tubes, beginning at the root and going towards the circumference of the lung, we find them closed up by a yellow substance, solid in the larger branches, and sometimes hollow in the smaller, from which it can be drawn out preserving the shape of the tubes; the bronchial mucous membrane is evidently inflamed. As to the bronchial vesicles, an accurate examination will show that they appear, either to the eye or to the lens, under the form of innumerable granules. When we tear the parenchyma of the lung these same vesicles assume the aspect of innumerable tufts and white elevations." Lobstein adds, that he has also found in connexion with this plastic bronchitis a tumefaction with red softening of the nervous filaments, which accompanies the bronchial ramifications. This latter condition I have not been able to verify. Others, besides Lobstein, have looked upon this disease as pneumonia, and I have no doubt but that it has been frequently mistaken for the typhoid form of pneumonia. It assimilates it only at its commencement, in the extreme suddenness of the attack, and the rapidity with which, in a debilitated constitution, part of the lung becomes solidified; it differs from it in its progress, for while under suitable treatment the lung affected with typhoid pneumonia rapidly resumes its functions, and the physical signs of solidification are, often in forty-eight hours, replaced by healthy vesicular respiration, the progress to recovery in plastic bronchitis is always slow, and the expec-

toration and peculiar *bruit de soupape* are pathognomonic of the disease.

The pathology of the two diseases is totally different, as indeed are also the microscopical appearances. This was demonstrated to the Pathological Society by Dr. Aldridge, in the year 1847, in a case of this kind which was under the care of Dr. Hudson, of Navan. Dr. Aldridge has also examined sections of the lungs in the fatal cases above alluded to, and it appears that in none of them can the exudation masses, observable in ordinary pneumonia, be detected, while all the characteristics of true typhoid matter are present—the very small size of the corpuscles, the great irregularity of their shape, their dotted surface, and the total absence of nuclei.

With regard to the treatment of this formidable affection, I think our chief reliance must be placed in the use of mercury, at least for the ultimate and permanent cure of the disease; while the general symptoms are relieved by the free use of wine and counter-irritation; there was no improvement in the physical signs, in any case, until the gums were affected by mercury; the lymph then became loose and detached, and copious expectoration commenced. The best form in which to administer the mercury is, either in that of blue pill or grey powder, combined with carbonate of ammonia and small doses of ipecacuanha; inunction may also be employed. Frequent and extensive counter-irritation should be adopted by means of hot turpentine and blisters; while, at the same time, wine and nourishment should be freely administered. Nor should its use be lightly or speedily laid aside, for, like any other specific inflammation, this disease has a great tendency to be reproduced after it has once existed, and relapses would appear to be both frequent and sudden.

Art. XVI.—*On the Influence of Vegetations on the Valves of the Heart, in the Production of Secondary Arterial Disease.* By Jolliffe Tufnell, F. R. C. S. I., M. R. I. A., Surgeon to the City of Dublin Hospital; Surgeon to the Dublin District Military Prison, &c. &c.

Attention has been recently drawn by Dr. Senhouse Kirkes, in a communication read before the Royal Medico-Chirurgical Society of London[a] to some of the principal effects resulting from the detachment of fibrinous deposits from the interior of

[a] Medico-Chirurgical Transactions, vol. xxxv.

the heart, and their admixture with the circulating fluid; and also by Dr. Rühle[a] in Virchow's Archiv, to the same subject.

These papers both ably illustrate the dangers attendant upon the presence of warty vegetations of the valves, and point out the sources of peril which cauliflower excrescences, once formed, must ever be, by demonstrating the serious results that may ensue from their detachment, and consequent presence in the circulating blood. They show how their arrest within an arterial canal, if of the head, may lead to direct paralysis and speedy death; or, if in the main artery of an extremity, be productive of gangrene, which, though slower in its consequences, yet ultimately becomes no less fatal to life.

A third form of this secondary influence has recently fallen under my observation, and, connected as it immediately is with the subject of arterial dilatation and aneurismal development, I propose directing attention to the case, and offering a few remarks upon it.

This case I saw, for the first time, on the 7th of January of this year. The individual in whose person it occurred was a young man, twenty-five years of age, of delicate constitution and small make. In August, 1846, after exposure to wet and fatigue in shooting, he complained, on returning home, of pain in different parts of his body, but which was more particularly marked about the ankles and knees. The symptoms were acute; he was unable to rise from his chair from pain in the insertions of the recti muscles, and the ankles were both swollen and tender; sore throat and general symptoms of cynanche accompanied this state; there was some degree of fever, thirst, hot skin, &c. &c.

This state was met by leeches being applied to the inflamed joints, the administration of the warm bath subsequently, followed by Dover's powder and blue pill, with alkaline cathartics.

On the 29th he was convalescent, and was allowed to leave the house, and take walking exercise in the grounds.

On the 2nd September relapse occurred, commencing with transient stiffness, and some uneasiness in the back of the Achillis tendon, followed by swelling of the left wrist. The next day there was a good deal of fever; the night was passed without sleep in consequence of pain; the pulse was 94, and throbbing; the headach considerable; skin hot, and urine depositing a lateritious sediment. Purgatives and colchicum were exhibited; and on the 6th there was a mitigation of the symptoms. It was now, for the first time, ascertained that the pa-

[a] Medical Times and Gazette, March 19th, 1853.

tient had gonorrhœal discharge from the urethra. Balsam and alkalies were, therefore, superadded to the colchicum. On the 14th he was free from all uneasiness. Upon the 20th the discharge from the urethra ceased; and on the 23rd he left the country for London.

From this date he continued in good health up to the month of September, 1852, when he contracted syphilis, and was subjected to the influence of mercury.

In November, after exposure to wet, he complained of pain in the head, shoulders, arms, and ankle-joints, with dyspepsia and gastric irritation. This attack was met by laxatives and diaphoretics, followed by sarsaparilla and hydriodate of potash, in doses of five grains, thrice a day. His recovery was tardy; but by the end of the month he had much improved, and his chest, upon careful examination, yielded no sign of cardiac disease. On the 8th of December, convalescence was interrupted by acute rheumatic symptoms, violent headach, hot, dry skin, and great throbbing of the carotid arteries, especially at night; to these succeeded periodical exudations of profuse sweat, occurring every eight hours: leeches were applied over the region of the heart, and colchicum administered internally. Up to the 16th of December there was no dyspnœa or palpitation. Uneasiness was now, for the first time, complained of in the cardiac region; this was followed by severe pain in the left hypochondrium: bellows murmur was shortly after loudly audible at the base of the heart. From this date the symptoms of cardiac disease began gradually to manifest themselves. There was inability to lie on either the left side or the back; the heart's action became jarring and violent; pulsation was visible in the carotids; the *bruit de soufflet* was loudly heard, not only in the heart, but over the great vessels; the countenance grew pale; the feeling of debility great, and tendency to fainting frequent.

Such had been the history of this patient previously to the evening of the 7th of January, when I first saw him. There was now universal pallor of the skin, conjunctiva, gums, and tongue. There were extreme debility, palpitation, and dyspnœa, accompanied by violent pulsation of the carotid arteries, with headach from throbbing of the cerebral vessels. The pulse was 96, jarring and regurgitant, but quite regular.

Upon examination of the chest dulness on percussion was found over a large space; and to the ear a double bellows murmur was audible, loudest at the middle of the sternum, but distinct over and along the course of the carotids as far as the angles of the jaws; to the bend of the elbows in the upper,

and the groin in the lower extremities. Beyond these points there was no *bruit de soufflet*, but a loud, single thump. The pulse, too, was visible throughout the same extent, at least wherever the arteries were superficial; a *bruit de diable* was also audible over the large veins of the neck. The condition of the patient was now extreme; he sat upright in his chair, speaking only in gasps, each sentence being interrupted by a short cough.

The diagnosis made was, dilatation and hypertrophy of the heart, patency of the aortic valves, with excessive anemia in consequence of deficient nutrition.

Removal of the causes of the latter condition being out of the question, the next object to obtain was an alleviation of its more distressing symptoms, by rest, pure air, nutritious diet, and chalybeates, with opium at night. To fulfil this end, the citrate of iron in two grain doses, in the form of the aqua chalybeata of Bewley, was prescribed three times a day, with half a grain of muriate of morphia in an ounce of Murray's solution of camphor at night. The diet consisted of an egg for breakfast, calves-foot jelly at noon, roast or boiled underdone brown meat at 4, with arrow-root and milk at 7, as little fluid being taken in the twenty-four hours as the patient could limit himself to. Under this treatment he continued to progress very favourably until the evening of the 10th, when, on being visited, he said he was afraid his right leg had become paralyzed, it felt so *heavy*, *dead*, and *cold*, and so full about the knee. Upon examining the extremity, its temperature first attracted notice. It was very low, much below the other. Its colour was a dirty, livid yellow, and the foot and leg were slightly œdematous. The knee was swollen, measuring one inch more in circumference over the patella than the opposite one, the difference caused not by general œdema, or effusion into the joint, but by the presence of a large pulsating tumour in the ham.

On inspection and examination of this tumour, it was found to occupy the lower two-thirds of the popliteal space, sinking down between the heads of the gastrocnemius muscle. It was oval, of the dimensions of a hen's egg, with a lateral diastolic motion of two inches, forcing the forefinger and thumb asunder when applied laterally to it at this degree of separation. Pressure on the trunk of the artery above completely controlled pulsation, *but did not effect any diminution* in the size of the swelling. There was no pulsation to be felt in the posterior tibial artery at the ankle. Upon applying the ear to the tumour, both unaided and with the stethoscope,

no *bruit de soufflet* could be heard, but a very loud single thump. A flannel bandage was now carefully applied from the toes to the middle of the thigh, and the same general measures as before continued.

On the 11th and 12th he progressed favourably. By the 13th he had so much improved under the chalybeate treatment, that he could lie flat upon his back in bed. His voice was stronger; he had lost the distressing beating in the head; and when visited in the evening said he felt quite comfortable. At 10 P.M. he retired for the night, and had been about an hour in bed, when he suddenly felt a twisting pain, of a very acute character, in the ham, being, as he described it, as if a corkscrew had been quickly turned into the joint, and then withdrawn with a jerk. This was followed by cramp in the leg, which grew worse and worse, assuming a burning character, and at last becoming so severe, as to make him cry out with pain. Having been sent for, I found him in the condition just described, calling for relief, and yet unwilling to allow the leg to be approached. After a little persuasion, however, he permitted a lawn handkerchief, sopped in laudanum, to be applied over the tumour, and gutta percha sheeting to be slightly bandaged outside. A full opiate was administered internally; and under the joint influence of the two he became tranquil, and in an hour dozed off to sleep.

The succeeding day no examination of the tumour itself could be gained, but, on exposing the front of the knee-joint for the purpose of loosening the bandage, a large artery was plainly *visible*, beating on the inside of the knee, and running over the condyle of the femur, showing that collateral circulation had become established.

There was also much increased action of the heart; it was forcibly pulsating on a level with the left nipple, and for two inches to the right side of it. The dulness upon percussion extended over a space of nearly three inches to the right of the left nipple, and for the same extent above and below. The pulsation in the carotid arteries was also very visible, especially on the right side. The most careful examination failed to detect any pericardial roughness, and there was no sign of mitral valvular disease beyond a slight fremitus or purring murmur, whilst the signs referable to the diseased state of the semilunar valves of the aorta were more manifest than before.

On the 18th the citrate of iron was increased to three grains thrice a day, the same general treatment being continued. On the 22nd, nine days after the attack of pain in the popliteal space, all tenderness there had subsided, and a careful exami-

nation of the ham was now allowed. The condition of the part was peculiar: all the symptoms of the previously existing tumour had disappeared, and the girth of the limb was the same as that of the opposite side. No difference could now be perceived in the two popliteal spaces when the forefinger of each hand was drawn along the course of the arteries, at the same time, on either side. The collateral vessel, already mentioned as pulsating on the inside of the knee, was still there, beating forcibly, and feeling to the touch as large as the radial artery at the wrist. The posterior tibial could now again be felt beating behind the inner ankle at its normal site, but very feebly, as compared with that of the opposite extremity.

On the 25th of January there were symptoms indicative of failing strength. The appetite had declined, and the digestion become impaired, gaseous distention of the intestines causing much pain of pleurodynic character in the left hypochondriac region. The face and jaws, too, exhibited signs of puffiness from œdematous effusion, and the urine was scanty.

Under these circumstances the citrate of iron was omitted, and an infusion of broom, with nitric ether and acetate of potash, substituted, and dry cupping, with opiate fomentations, were applied to the painful region of the side. The urine at this time, and throughout the whole period of illness, exhibited no trace of albumen either upon the addition of nitric acid or the application of heat. On the 3rd of February, the pallor of the countenance having increased with accompanying debility, tartrate of iron was added in five-grain doses to the diuretic mixture.

On the 16th, at midnight, he was awakened out of sleep by paroxysm of pain of anginal character, the breathing being very rapid and distressing, each attempt to inspire being met by short spasmodic cough. This continued for some time, and eventually subsided under repeated doses of Hoffmann's anodyne liquor in Murray's solution of camphor. From the 16th to the 20th he gradually sank, the sensorium being clouded by day, and delirium supervening at night; wine and stimulants were fruitlessly given, and he died quietly and without pain on the morning of the 20th, the pulse, just prior to dissolution, being as steady, full, and regular, at 90, as in health: the jerk previously existing from regurgitation having subsided as the heart's power of contracting declined; and the wrist, if presented out of bed to a bystander unconscious of the real nature of the case, might have been regarded as the pulse of an individual in robust health.

The body was examined thirty hours after death. Upon

raising the sternum, the pericardium floated upwards on a level with the most projecting portion of the heart, being elevated by serum effused into it to this extent, or about, in measured quantity, six ounces. The pericardium covering the heart, as well as the reflected portion of this membrane, showed no trace whatever of inflammatory action. The heart itself was about twice the natural dimensions, and obtusely rounded at its apex; the right auricle and left ventricle were considerably distended with blood. On examining the cavities consecutively, in the course of the circulation,—the right auricle was found dilated and thinned, but not otherwise diseased; the right ventricle less considerably enlarged, though somewhat so; the tricuspid valves quite sound: no trace of endocarditis having apparently ever existed in either of these cavities: the pulmonary artery and its valves were also natural. Proceeding thence to the lungs, both were congested from impeded circulation, and the air-tubes to their minute divisions exhibited conditions peculiar to congestive bronchitis. Returning to the left side of the heart, the pulmonary veins were natural; the left auricle dilated, and its structure thickened; the left ventricle greatly enlarged, and its walls hypertrophied; the mitral valve sound, with the exception of its anterior segment, where were deposited a very few specks of fibrous vegetation. At the aortic valves, as diagnosed, lay the sole seat of disease. Each semilunar division was enlarged to about twice its natural dimensions in diameter, rolled upon itself and everted, projecting upwards towards the arch of the aorta, encrusted upon every direction with masses of fibrine, gray and nodulated; some in tubercles, others in pendant bunches, forming warty growths with narrow pedicles, or cauliflower-like vegetations, to an extreme degree. Immediately above the semilunar valves, in the sinus of the aorta, existed a large sloughy ulcer, which had destroyed the lining and middle coats of the artery. Beyond this, the aorta was slightly dilated, and bore traces of atheromatous deposit to some extent.

The popliteal artery was then carefully dissected out from its exit from the tendinous canal of the adductor muscles to below its tibial divisions. Examined by the eye, it presented a natural appearance as far as the giving off of the articular vessels; below this it spread out into an oval, flattened body, somewhat resembling the cauda equina of the spinal cord. It then became slightly narrowed before dividing into the tibial arteries, which were both pervious, but their venæ comitantes were obliterated, filled with clots of consolidated blood, of dark modena hue, lodged in separated oval nodules. To the touch, the

artery itself above appeared perfectly healthy, though whitish throughout the portion described, but it felt densely solid and firm.

Upon slitting it up, and exposing its cavity throughout, no disease whatever could be found in the upper portion, but towards its lower end it had been converted into a fibrous cord of greyish-yellow colour, as solid as the walls of a long-standing gristly stricture of the urinary canal. In the intervening space was lodged a clot of fibrine, intimately connected to and with the artery below, less closely adherent in the middle, and only applied against its lining membrane above, whence it stretched upwards in a pediculated form to the nearest collateral branch. Its colour, too, greatly differed throughout this course, being gray at the inferior portion, yellow in the central, and blood-coloured at the top, its density decreasing in proportion as the fibrine verged from organic to mere clot.

Such were the local appearances in this case. Here, I think it will be allowed, is demonstrated the value of post-mortem examinations. We see symptoms, anomalous and obscure during life, made intelligible, patent, and clear; all doubt and mystery removed; and the details of a case rendered apparent, which might otherwise have (from their unusual character) become the subject of much speculation, if not of discussion and dispute.

We see symptoms so strongly simulating aneurism, that it is difficult to decide in the negative as to its existence. We have pre-existing arterial disease in a frame which had been subjected to the effects of syphilis and mercury; a pulsating tumour in the most frequent seat of the disease, whose diastole is arrested by pressure on the cardiac side; numbness and slight pain in the limb from distention of the passing nerves; œdema of the foot, and passive congestion from pressure on the veins and lymphatics; diminished temperature from interrupted arterial circulation, and loss of pulsation in the branches of the vessel below, yet differing from aneurism in two very important points, viz., being totally devoid of *bruit de soufflet*, upon the most careful examination by the ear; and though fluid and of recent formation, yet not decreasing in size when the flow of blood was arrested by pressure from above.

These two points led to the diagnosis that there was no true aneurismal sac communicating with the arterial tube, but that the whole vessel was dilated,—a circumstance for the occurrence of which weeks, or even months, would, under ordinary circumstances, be required, yet here developed in a few hours. Soon, however, a fresh train of symptoms, resembling

aneurism, set in: as in the majority of the cases cured by compression, sudden pain was experienced in the tumour, of an almost excruciating character, lasting for the customary period, then subsiding, and being followed by well-developed collateral circulation. But now again there is a divergence from the simile. No tumour of densely hard character, resulting from the consolidated blood, is to be found in the popliteal space at the seat of disease; but instead, the feeling communicated to the fingers as if the artery were again pervious throughout, confirmatory evidence existing in the restoration of circulation in the posterior tibial artery at the ankle. All these conflicting circumstances have been cleared up by the post-mortem examination.

We find the artery pervious through some extent of the popliteal space, yet at its inferior extremity firmly and entirely closed, its canal plugged by fibrine superiorly, the walls of the artery cohering below, or like a gristly stricture consolidated by fibrous deposit.

We find no traces of a sac or aneurismal pouch; no atheromatous disease of the vessel in its course, the artery healthy at this spot, as well as both above and below. We have the artery obstructed, and rendered impervious to the blood-passage through it, and secondary consequences resulting. We trace them to the centre of the circulation—the heart, and there discover appearances that will readily resolve the phenomena in question,—loosely attached fibrinous vegetations from the sigmoid valves, hanging by pedicles into the aorta, and so delicately adherent, that a touch almost is sufficient to detach them from their site.

Here is a ready explanation of the whole; and yet, before accepting it as certain, we must take another view of the case, and determine that the symptoms did not depend upon acute local arteritis,—such a condition as has been observed by Dr. Stokes in the following case[a]:—

"A young person, with permanently patent aortic opening, had, whilst labouring under the consequences of this affection, sudden pain in the calf of the leg, accompanied by pulsation in the tibial vessels to a most violent degree; next, a severe attack of pain in the biceps muscle, with immense local arterial excitement, succeeded by loss of pulsation at the wrist. Then, leaving this spot, irritation elsewhere, local arterial throbbing setting in consecutively in different portions of the

[a] This case is unpublished, and for permission to refer to it here I am indebted to Dr. Stokes.

circulatory system in turn; these attacks, however, accompanied by rigors, fever, and sweating, that ran the patient down and accelerated his end. Here no dissection was allowed."

That the obliteration of the popliteal artery in the case described did not result from local arteritis, but was caused by mechanical plugging of the vessel by a foreign body, I have not a doubt: and for this reason, viz., that had it been caused by arteritis, there would have existed symptoms of an inflammatory character in the general system, and the disease would not have been confined and limited to a single spot.

It may be urged, however, that, in the examples of plugging of the arteries by fibrinous deposits detached from the interior of the heart, which have been adduced by Dr. Kirkes in his paper, already referred to, the masses of vegetation were themselves discovered, not adherent to the coats of the arteries in which they were lodged, but merely lying loosely in the caliber of the vessel. In the case under notice, on the contrary, we have no traces of this vegetation existing. We find, at the spot of its arrest, the artery perfectly obliterated, converted into a fibrous cord. This condition, then, I believe to have been brought about in the following way:—The vegetation became impacted in the vessel so firmly as totally to exclude circulation. The artery then, behind the seat of obstruction, became distended by dilatation of all its coats; inflammatory action was set up at the point of arrest; lymph was in consequence effused, adhesion ensued, and obliteration of the vessel at this spot followed as the final result. Whilst this occurred, the artery above, retaining its elasticity to a considerable degree, contracted upon the blood contained in the dilated portion, expelled the greater portion of it through the collateral vessels, and emptied itself, so far as to prevent consolidation of a sufficient amount of blood to afford to the touch the sensation of solid tumour, which is felt after rapid cure of aneurism here. A small quantity necessarily remained in the caliber of the artery, which, retained here, coagulated, and formed the clot found within this space, as exhibited in the preparation, and represented[a] in the lithograph annexed.

With such complete stoppage of circulation through the limb as occurred in this case, it is, at first sight, a matter of wonder that mortification of the extremity did not ensue, such as followed in the case quoted by Legroux. Why it did not, I

[a] This preparation, and the original drawing by Mr. Connolly, are in the author's possession.

think may be readily explained by reference to the report. The vessels had been so long subjected to forcible distention, from a greatly enlarged and powerfully contracting heart, that they adapted themselves with more than ordinary readiness to the circumstances of the case, and speedily dilated, so as to form a collateral circulation sufficient to give free passage to the blood, and thus prevent gangrene of the leg and foot. A more difficult point of solution is the reason why the artery, upon blocking of its canal, should in this instance have dilated into a tumour, and such a condition not equally obtain when a ligature is ordinarily applied. The explanation, I think, however, may be satisfactorily afforded by referring to the peculiar condition of the individual himself in this case. With cardiac enlargement and disease of the aortic valves, anemia, and broken health, to the degree which existed here, no surgeon could think of resorting to the operation by ligature, if an aneurism did exist. We have not, nor, I think, are we likely to have, analogous cases, subjected to the ligature, and consequently are deprived of the only sources of practical deduction; but, in their absence, we may, I think, fairly draw an inference from negative conclusions.

One subject further remains for our consideration, and from its consequences it becomes the most important of the whole. I mean, the cause of the warty vegetations. Are they simple polypiform concretions resulting from coagulations of the blood, as regarded by Laennec and confirmed by Andral? Are they the result of some peculiar condition of the blood, or particular constitution of the individual, as suggested by Dr. Hope? Do they follow as the consequence of inflammation of the endocardium? Or, as laid down by Dr. Hughes, from coagulation of the blood upon the inflamed membrane? Rheumatic inflammation is now their generally assigned cause, and is, in this instance, confirmed by the history of the case. I have taken the trouble of tracing it carefully back, and find that, so far distant as the year 1846, when only eighteen years of age, this patient was the subject of fibrous rheumatic inflammation. This attack did not, however, in my opinion, affect the semilunar valves, for recovery was perfect, and succeeding health good, a corroborative proof of which is to be found in the fact of his having passed the careful medical inspection of a Life Assurance Office referee in the intervening time. The mischief, I think, we may assume to have been the result of the last acute attack upon the 8th of December, and for this reason, that the most careful stethoscopic examination, prior to this date, yielded no physical sound indicative of disease—a

condition which immediately followed upon this attack, was clearly and obviously present upon the 16th, and remained constant to the time of death. Occurring then, however, I do not, however, refer it to *general* endocardial inflammation, for no trace of such affection could upon *post-mortem* examination be shown to have existed in the lining membrane of the heart, but, in inflammation only of that portion which, from its peculiar nature, became more liable than any other to be the subject of rheumatic attack, viz., the tendinous structure of the passive semilunar valves.

The fibrous structure of the latter must be regarded as affording a tissue much more likely of assault than the fine serous membrane of the endocardium; and, so regarded, inflamatory swelling of the valves once set up, exudation of lymph has only to occur, in a greater or less degree, to form the granular or warty growth, or assume the state of cauliflower excrescence. Upon the size and shape of these vegetations of the valves must necessarily, and to a great extent, depend the attendant danger. The larger and more friable the growth, the more likelihood of their being detached, and when set free their size must, of course, determine the point of arrest; the greater their magnitude, the more important is it the vessel in which they become impacted; but even in the smallest form, such as in casual inspection of post-mortem examinations might be considered as of trifling importance, their presence, as demonstrated by Dr. Hughes, may be the cause indirectly of fatal results, by retarding the blood in its progress, and thus inducing fibrinous concretions, which, equally with the vegetation itself, may be carried into the circulating fluid, be lodged in the cavity of a vessel, and produce death by paralysis if of the head, or gangrene if into an extremity of the body.

I have brought this case forward now because I consider it one of interest to both the practical surgeon and the physician; and as it is a subject of great importance, in connexion with arterial disease, I purpose at some future time, when speaking of aneurism, to refer more particularly to it.

Art. XVII.—*On Dislocation of the Cervical Vertebræ, without Fracture.* By Richard G. H. Butcher, F. R. C. S. I., Surgeon to Mercer's Hospital; Examiner on Anatomy and Physiology in the Royal College of Surgeons in Ireland, &c., &c., &c.

In order that fatal compression be exerted upon the spinal marrow in dislocation of the vertebræ without fracture, it is essential that the intervertebral substance be disruptured. The following well-marked case, occurring in the cervical region, forcibly illustrates the point, and I deem it sufficiently interesting to be placed in the records of surgery.

Michael Roche, aged 36 years, admitted into Mercer's Hospital, under my care, at half-past 4 in the afternoon of February 4th, 1853. The man, being employed as porter at a coach-office, was in the act of arranging some luggage on the top of a vehicle, when he slipped off, and fell upon the pavement on his head. He was quite sensible after the fall, but was instantly deprived of all power of motion in the lower limbs, and nearly so in the upper. The first complaint he made was relative to excruciating pain at the root of the neck. The accident occurred not more than two hundred yards from the hospital, and I was summoned immediately to see him; a few minutes had only elapsed, and I found him in the following condition:—He was perfectly collected and sensible, the brain not being affected; he deplored his condition audibly, but the voice was feeble and could not be raised in answering questions. There was a lacerated wound of the scalp, about two inches in length, over the occipital bone, at its superior margin, and to the left side just below where it comes in contact with the superior posterior angle of the parietal bone. I examined the wound. The periosteum was slightly detached, but the bone was not depressed; he did not complain of pain here, but referred all his sufferings to the root of the neck. On examination, a manifest depression was perceptible at about the junction of the fifth and sixth cervical vertebræ; and this was rendered more strikingly conspicuous by a transverse sulcus in the corresponding soft parts. The head was inclined a little backwards, and to the right side, and the face was also slightly rotated in the same direction. The neck was somewhat prominent in front, rendered preternaturally so by the bulging forwards of the trachea. The muscles of the region were in bold relief, steadying the parts in their new and acquired position, and exerting manifestly a protective influence against motion.

The entire neck and face appeared somewhat congested, though no marks of contusion were visible, even over the immediate site of injury in the spine. The patient lay upon his back, the position which he desired on being placed in bed. The lower extremities were extended, flaccid, and motionless; neither was there sensibility in them, nor over the surface of the body as high as the neck, and all power of voluntary motion was lost. The upper extremities were only partially affected as to sensation, the fore-arms and fingers were entirely deprived of it, while the upper arms maintained it in a minor degree; but the power of motion, as in the lower extremities, was totally annihilated; the upper limbs lay across the chest; the fore-arms bent, nearly at right angles with the arms, and the fingers contracted. On the slightest attempt to alter this position, intense pain was experienced, "as of the darting of a knife" at the root of the neck. There was total paralysis of the intercostal muscles; the chest was motionless, except at its inferior margin; and the abdominal muscles were flaccid. Respiration was merely performed by the diaphragm; thus the muscles of expiration seemed likewise deprived of their motor power; and the expiratory effort was effected by the elasticity of the thoracic and abdominal parietes, restoring the parts which had been previously displaced by the diaphragm. The pulse was slow and weak, and the surface of the body cold. The sphincter ani had given way, and fæces were passed involuntarily. The penis was flaccid, and the bladder empty.

The treatment adopted in the first instance was entirely directed towards supporting the neck evenly, and propping the patient on either side with pillows; then the application of heated jars to the pit of the stomach and extremities, warm drinks, &c., to bring about re-action.

In five hours the pulse became full and strong, the temperature of the body rose, and the heat in the lower limbs was actually greater than natural. The respiration, which was before slow and tranquil, became hurried, and, in short, all the evidences of re-action were strikingly manifest. Ordered eighteen leeches over the injured part of the spine, and ten grains of calomel, with four of James' powder, in a bolus. A catheter was passed, and about three ounces of urine drawn off.

February 5th. He had imperfect sleep in the course of the night; position of the body as placed on yesterday. Pulse full; action of the heart steady; respiration rather slower; refers "indescribable pain" to the root of the neck; total annihilation of sensation and power of motion in the parts already referred to. The increased development of heat in the lower

extremities is very remarkable, and not at all so conspicuous in the upper; there is also to-day slight tremulous motion of the cheeks and lips. There has been no involuntary passage from the bowels since yesterday, but the entire abdomen is inflated and tympanitic. The bladder is distended. I passed a catheter, and drew off somewhat more than a pint of urine, a little darker than natural, and faintly acid. The long tube, passed up the rectum, permitted a large quantity of gas to escape. He was ordered eight leeches to the spine, calomel, two grains, and the eighth of a grain of opium every two hours. The patient requested to have his position altered, and to be placed upon the left side, which was not accomplished without much suffering, but when steadied, was a position most favourable for the dislocation of the neck.

3 P. M.—I passed the catheter, and drew off a pint and a half of urine, more acid than that removed in the morning

6th. 10 A.M.—He has been sleeping for short periods through the night, and now seems to be in a prolonged doze, yet when roused up speaks sensibly, but again quickly relapses into quiet, and shuts his eyes. The eyes are filmy, and lack vivacity. Pulse and heart steady in beat, but weak in force. Respiration hurried and feeble. The patient makes ineffective attempts to get rid of some increased secretion of mucus from the bronchial tubes, but the cough is imperfect—the act fails; the expiratory muscles remain as from the first, paralyzed. The development of heat in the lower limbs has become even greater than at any former period, though the powers of life are more prostrated. Abdomen greatly swollen, and increased tympanitis. I passed the long tube many inches up the bowel, and allowed a quantity of air to escape. Bladder distended; the catheter was introduced, and a pint of urine drawn off, far more dark and acid than on yesterday. Mouth touched by the mercury, its administration stopped.

3 P. M.—Drew off a pint of urine, highly acid and dark-coloured.

February 7th. 10 A. M.—He has remained since last evening in almost a constant doze, is easily roused, and is quite sensible, but answers questions with difficulty, owing to embarrassed respiration; the countenance is expressive of great anxiety and distress, the brows furrowed and cheeks haggard. The pulse is weak and small, the upper extremities and body cold, but the lower limbs still preserve a great exaltation of temperature. He continued to grow worse, his respiration more laboured, and he expired at 1 o'clock, fifty-seven hours after the accident, retaining his faculties unclouded to the last.

Examination nineteen hours after death.—The neck rigid, in the same position as it maintained during life, and with all the external indications of displacement as strikingly marked. On cutting through the muscles, and detaching them from the back of the spine, a quantity of extravasated blood was situated in a circumscribed way, repullulating, as it were, from the immediate site of the injury. The supraspinous ligament, derived from the ligamentum nuchæ, was torn through between the fifth and sixth cervical vertebræ, as well as the muscular fibres in the same locality, filling the offices of interspinous ligament; the articulating processes of the fifth and sixth cervical vertebræ were apart more than a quarter of an inch, particularly on the left side; the partial rotation of the head and five superior vertebræ to the right side will account for this inequality; it is scarcely necessary to mention their little capsular ligaments were torn, and their polished cartilaginous surfaces exposed. On examining the front of the column, the body of the fifth cervical vertebra formed a remarkable prominence, the connecting fibro-cartilage between it and the sixth, being entirely torn through, permitted of the anterior displacement of the former by the depth of half its body in front of the latter, while two-thirds of the intervertebral substance adhered to the sixth, and one-third to the fifth vertebra, the anterior common ligament of the spine was perfect in its structure, being only separated to a small extent from the margins of the displaced bones. In order to prosecute the investigation, I removed carefully the whole of the cervical spine, without in the least degree disturbing the parts, and plunged the entire into alcohol, so as to stiffen them in their acquired position. In eight-and-forty hours I removed the transverse processes and laminæ on the left side, cutting through the pedicles in front of the former, and severing the latter close to the bifid spine. This section was readily effected by means of a fine bow saw, such as I employ in amputations. The theca was slit up, laid to either side, and the spinal marrow exposed; the specimen thus illustrated beautifully to how great an extent the antero-posterior diameter of the vertebral canal was lessened,—from careful measurement, I should say, by about one-third; and how the fatal pressure was produced between the body of the vertebra below the diastasis and the arch of the fifth above it; the slightest fragment of bone could not be detected as having been detached in the site of the injury. The preparation, as I have described it, remains in my possession, and is catalogued "Dislocation of the cervical vertebræ without fracture."

The mode in which the force was applied, in this instance, sufficiently accounts for the effect produced. The man fell upon his head, which, together with the five superior vertebræ, was driven forward, while the trunk and lower extremities, falling backwards, propelled the inferior part of the column in the contrary direction. The position of the wound, on the occipital bone, will account for the rotatory displacement towards the right side. It is unnecessary to recapitulate; the treatment of the case was directed with the following objects:—First, to steady the displaced spine, effected by the judicious arrangement of pillows; for here the removal of the deformity could not be procured by gentle means, and more violent measures were not had recourse to: secondly, large local depletion was employed to prevent inflammation and its consequences: and, lastly, the exhibition of mercury to insure this object, and protect the phrenic nerves from being involved by softening of the spinal marrow, and extension to their roots. Though all these intentions seemed to be fulfilled, as verified by post-mortem examination, yet this did not stay the rapidly fatal issue: death in fifty-seven hours after the accident.

Dislocation of the vertebræ, without fracture, produced by accident, is so uncommon, if we exclude the first and second bones of the neck, that the likelihood of its occurrence has not only been doubted, but denied by some of the very highest authorities. Boyer, in his "Traité des Maladies Chirurgicales," which contains the valuable *resumè* of his great experience, dwells upon the circumstances which prevent the displacement of the bodies of the vertebræ, and, without directly denying it, appears clearly to disbelieve its possibility[a]. Delpech maintains it, as a point proved by observation, that the bodies of the vertebræ cannot be dislocated[b]. Sir A. Cooper states:—"In the numerous instances which I have seen of violence done to the spine, I have never witnessed a separation of one vertebra from another, through the intervertebral substance, without fracture of the articular processes, or, if those processes remain unbroken, without a fracture through the bodies of the vertebræ. Still I would not be understood to deny the possibility of dislocation of the cervical vertebræ, as their articulating processes are placed more obliquely than those of the other vertebræ. I must, however, observe, that, from the vicinity of our hospitals to the river, sailors are often brought into them

[a] Tom. iv. cap. iv.
[b] Précis Élémentaire des Maladies Réputées Chirurgicales, tom. iii. p. 42.

with injuries of the spine, by falls from the yard-arm to the deck, and as there is almost always an opportunity of inspection in these cases, a dislocation must be very unusual, since I have never met with a single instance of it, those injuries having all proved to be fractures with displacement"[a]. If we consider, however, as Dupuytren remarks, the number and strength of the ligaments which unite the vertebræ together, the almost vertical or slightly oblique facing of their articulating processes, together with the extended surface by which their bodies are connected, and the small amount of motion admitted between any two, it must be conceded that all these points combined necessarily render dislocation very difficult; but when we superadd the comparative facility with which the bodies of the vertebræ give way by fracture under external violence, one almost ceases to be surprised at the scepticism manifested by most writers regarding the feasibility of simple luxation.

A few well-accredited cases are on record of pure dislocation of the spine, almost similar to the one occurring in my practice.

Mr. Lawrence relates one case, proving that complete dislocation, both of the articular processes and body without fracture, may occur in the cervical region of the spine, and the preparation is preserved in the Museum of St. Bartholomew's Hospital. Dupuytren recites, in his Leçons Orales, many instances of extensive displacement; but in each there was the complication of fracture. He only gives one case of pure and fatal dislocation. It is that of a sailor who was bathing in the sea, with a sail spread to keep off the sharks; and in plunging head foremost he came in contact with the sail, and was taken on board with paralysis, and all the symptoms of compressed spinal cord below the neck; he died on the seventh day. On examining the body, the inferior articular processes of the sixth cervical vertebra were found dislocated, and there was rupture of the corresponding fibro-cartilage, with laceration of the common anterior and elastic ligaments. The body of the sixth cervical projected forwards; the spinal cord was compressed, softened, and injected. Mr. Samuel Cooper, in his Surgical Dictionary, alludes to a specimen of complete dislocation of the middle cervical vertebra without fracture, which was lent to him by a gentleman attending his lectures, and which he had shown to the surgical students of University College. The accident befel a person who was sitting upon an omnibus as it

[a] Cooper's Practice of Surgery, edited by Lee, vol. ii. p. 481.

passed rapidly under a gateway, the upper part of which struck against him with great violence. A very interesting case of this rare accident has been published by the late Mr. Liston in the Lancet for October, 1837.

The patient, a carpenter, thirty-five years of age, was, on the evening previous to his admission to hospital, sitting on a rail about four feet in height, when he fell suddenly backwards, pitching on the ground with considerable force, and falling upon his shoulders and the lower part of his neck. He was quite sober at the time. On being taken up he was found to be sensible, but the use of both his arms and legs was entirely lost. He was removed to a shop in the neighbourhood, where he remained during the night, and in the morning at 9 o'clock was carried to hospital. He was sensible on his admission, and free from pain when he remained at rest; when he was moved, however, he complained of great pain across the shoulders. The upper and lower extremities, and almost the entire trunk, were completely paralyzed, both as regarded sensation and motion, which were, however, natural in the head, neck, upper third of the thorax, and a few inches below the shoulders. The breathing was oppressed, and carried on almost entirely by the diaphragm. At 5 P. M. all his symptoms gradually grew worse, and at 8 P. M. he died.

The autopsy was performed eighteen hours after death. The blood, which was perfectly fluid, was much effused between the posterior muscles of the neck. There was complete luxation between the fourth and fifth cervical vertebræ, the latter being thrown backwards. The proper ligaments of the vertebræ were lacerated, as were also some of the tendons of the longus colli muscle. *There was no fracture of the articulating processes.* On opening the vertebral canal, the cord was found to be compressed between the arch of the fourth and body of the fifth cervical vertebræ; the membranes of the cord were not much injected. The cord appeared a little softened at the compressed portion, but otherwise its texture was unaltered.

In Norris' Statistics of Fractures and Dislocations, published in the American Journal of Medical Science for April, 1841, there is to be found one case of pure dislocation of the spine. The patient, a man aged 30, was admitted to hospital early on the morning of the 9th September, 1831. At 11 o'clock on the previous night, while in a state of intoxication, he had been thrown headlong against the curbstone from a gig that he was driving at a furious rate. There was complete paralysis of the lower extremities, chest, and lower half of the

trunk. He complained of great pain over the lower cervical vertebræ; but so much swelling and ecchymosis existed at this part, that the state of the spinal column could not be satisfactorily ascertained. When placed in the erect position, he cried out from pain, unless his forehead was firmly supported; and when laid on his back, his head was seen to be thrown a little forwards, and pushed down upon his chest. The hands and arms retained their sensibility, but he was unable to double his fist, or seize any thing firmly. His respiration was hurried, difficult, and performed entirely by the diaphragm. Priapism existed, and continued constant till the period of death. On the morning of the 11th he died.

Autopsy.—A considerable effusion of blood was found in the areolar tissue beneath the skin, as well as between the muscles on the back part of the neck. The yellow ligaments, and the ligamentous fibres, holding together the oblique processes, were ruptured; and the fifth cervical vertebra was thrown forwards upon the sixth. Examined in front, the vertebral ligaments were found also to be ruptured, and the inter-vertebral substance torn up, so that the body of the fifth was completely separated from, and projected over, the sixth. Accurate examination, after the removal of the upper part of the spinal column, proved *that no fracture existed*, and that the injury consisted in *a simple displacement of both body and processes of the vertebræ.*

A most remarkable instance of dislocation of the spine, without fracture, is related in the Gazette Médicale for November, 1841, by M. Lasalle:—A man, thirty-six years old, was taken to the Maison Royale de Santé, at Charenton, in a state of furious mania, and it was found necessary to confine him to his chair by means of two leather straps, which went from the upper part of its back and fixed his shoulders; and two others, which went from the same part a little lower down, and were fastened to his arms. After making various efforts to break from his confinement, the patient rose up from his seat, threw his head forcibly backwards, and then flung it with great violence forwards. After this last movement, the head remained bent on the neck, and the neck on the chest, and his limbs were completely paralyzed. The author saw him soon afterwards, and found an absolute loss of power in all the muscles below the neck, except the diaphragm and those of the arms, which were but partially paralyzed. There was neither bruise, swelling, nor deformity in the course of the vertebral column. About thirty-six hours after these events,

which were witnessed by a keeper and a fellow-patient, the man died, with all the usual signs of pressure on the cervical portion of the cord. On examination, a solution of continuity was found between the fifth and sixth cervical vertebræ, the posterior cervical ligament and the interspinales muscles were ruptured, and no bond of union remained between the spinous processes, whose bases were separated, so as to expose the remains of the ligamentum subflavum and the membranes of the cord. The intervertebral substance was torn; a part remained attached to the fifth, a part to the sixth vertebra; but there was no fracture of the bones, nor any material displacement of them. The dura-mater, at the seat of the injury, was tinged with blood, and the surrounding cellular tissue was infiltrated with it. None of the membranes were torn; but in the interior of the cord, opposite the injury, there was a vast ecchymosis, extending downwards to the second dorsal, and upwards to the third cervical vertebræ. Rust affirms that even the lumbar and dorsal vertebræ may be dislocated, as quoted by Lawrence[a], and Sir C. Bell mentions one instance of it.

In the Edinburgh Medical and Surgical Journal, a case of complete dislocation, backwards, of the fifth from the sixth cervical vertebra, is recorded.

The patient, a man aged 37, was admitted into Haslar Hospital, suffering from the effects of a severe fall, where he died, fifty-five hours and a half after the accident. *Autopsy.*—On the posterior surface of the body, extending from the occiput to as far as the sixth or seventh dorsal vertebra, there was considerable ecchymosis; and in making a section of the integuments and subcutaneous areolar tissue a quantity of blood was found effused into its texture. Coagulated blood was also, in great quantity, found surrounding the muscular fibres, a number of which were ruptured and softened. These being cleared away, a little more careful dissection exposed to view a considerable displacement, backwards, of the fifth from the sixth cervical vertebra. It was found that the little finger could be passed into the spinal canal, and that the body of the fifth pressed severely on the spinal cord, and rested on the lamina and spinous process of the sixth cervical vertebra. The parts being removed, it was then ascertained, beyond all doubt, that *the injury was a complete dislocation without fracture.* The ligaments and intervertebral substance were all ruptured. There are other points of interest connected with the history and dis-

[a] Medico-Chirurgical Transactions, vol. xv.

section of this case to which I must refer the reader. In Miller's Practice of Surgery a case is related, and the appearances figured, where dislocation took place between the fourth and fifth cervical vertebræ. The patient fell backwards over a high paling, and alighted on his head. The cord was torn, complete paralysis followed, and the issue was fatal within a few days.

These cases, taken connectedly, are, I consider, of great value. First: Because, in most works on practical surgery, the fact of pure dislocation of the spine, which they are intended to elucidate, is entirely overlooked; and secondly: A perusal of them, I conceive, will tend to make the surgeon cautious before resorting to operative measures in lesions of the spinal column, owing to the numerous difficulties which beset the task of accurate diagnosis.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Principles and Practice of Surgery. By WILLIAM PIRRIE, F. R. S. E., &c., &c. London: Churchill. 1852. 8vo. pp. 952. Illustrated by numerous Engravings on wood.

Bulletin Général de Thérapeutique. Vols. XL., XLI., and XLII. Paris: 1851–52.

THROUGH the kindness of M. Debout, Editor of the above excellent French periodical, in permitting us to use a selection from the woodcuts he has employed in the illustration of various surgical essays, which have been published in his Journal during the last two years, we are enabled to lay before our readers a descriptive account of some of the most important contributions to operative surgery which have been made by the French school since our former *resumè* of this subject[a]. On the present occasion we shall embody our remarks in a review of the most recently published book on British Surgery, that of Mr. Pirrie, which, now that it has received the examination, for the most part with a favourable result, of the English and Scotch reviewers, fairly demands a notice at this side of the channel.

The impression which exists, that, in order to emerge from obscurity, a professional man must "become an author," has acted as a powerful inducement to many to appear in print. Some, possessing the *cacöethes scribendi* in a morbid degree, tax their brains and rake up all their resources, to procure materials upon which to write; others, devoid of originality of thought, possessed of but scanty information, and wanting in ingenuity sufficient to turn to their own account the labours of others, yet having a praiseworthy industry, are content if they

[a] Vol. x. N. S., p. 107.

can lay claim to authorship by constructing a work which is entirely compiled from the writings of others, and in which descriptions of the more important points connected with the different subjects are culled from the labours of distinguished men, and carefully put together.

To write well, and to give information upon any department of surgery, is a difficult task; but to construct a *good* book, embracing the entire domain of surgery, is an undertaking few could accomplish with complete success. Indeed, the character of the book must differ, as it may be designed for the instruction of the student, or as a book of reference for the practitioner; and its merit should be tested according to the manner in which either object has been carried out.

The work of Mr. Pirrie is dedicated to the surgical students of the Marischal College and University of Aberdeen, being, as is stated in the Preface, a compendium of the author's lectures, which he has published in accordance with the frequently expressed wishes of his class. After giving it a careful and dispassionate perusal, we are bound to admit that the author has, to a great extent, accomplished his object, and has furnished the students of his own class with a concise and clear account of most surgical subjects. Reference is generally made to the best and most recent writers upon each disease; and in the operative department of the work, well-executed woodcuts, copied from Mr. Liston's work, are introduced for the purpose of illustration.

But we very much doubt how far a compendium of this description is to be approved of as a means of conveying instruction. Too great condensation is incompatible with an easy acquisition of knowledge; and when certain facts and statements are put forward, in an abrupt and isolated manner, without explanation or comment, the memory is taxed to a greater extent for the time being, and yet the impression made is evanescent. A mind which is to be formed to any particular inquiry requires to be gradually shaped and moulded to it, and how can this be done if the information is conveyed unconnectedly and completely detached from all explanatory matter?

We feel confident that this is indeed the great evil in the education of the medical student.

Now let us take each of the subjects treated of in Mr. Pirrie's work, and as we go along it will be seen how far the method adopted by him is calculated to answer the purpose of sound instruction.

The volume opens, as most other similar works do, with the subject of inflammation,—one of vast magnitude and ex-

tent, of the highest interest to the physiologist, and of the greatest importance to the practitioner,—a subject which has been explored, and is still in progress of further investigation, by the ablest scientific researchers, and has been always viewed as the most essential study by the practical surgeon. This subject is shortly despatched in Mr. Pirrie's work, thirty-eight pages including the whole theory of inflammation, its events and terminations, and its treatment, together with abscesses, ulcers, and mortification. A clear and concise account of the most recent views of the inflammatory process, particularly as they have been established by Bennett and Wharton Jones, is, no doubt, given in as far as they may be sufficient for the junior student; but what a deficiency of information is to be observed upon the important subjects of suppuration, ulceration, and mortification! "When purulent matter," says the author, "is confined in the parenchyma of a part, in a cavity which is not natural, it constitutes an abscess:" here is the entire account of the nature of an abscess! No description of the manner in which it is formed, how the cyst is produced, how pus is furnished, and how it makes its way to the surface, is given. Acute abscess is spoken of, and its symptoms and treatment briefly detailed, but the student is not made acquainted with what an acute abscess *really* is, wherein consists its essential condition, and what are the characters by which it forms a striking contrast to the chronic. But if the information upon acute abscesses be meagre, that upon chronic is still more spare:—

"Collections of matter sometimes form slowly and insidiously, and the symptoms of inflammation which precede them are but slightly, if at all, perceptible; in such cases, the abscesses are said to be chronic. These collections often attain a great size; there being little fibrin effused around the matter, the sac is thin, and the resistance to extension feeble; they are frequently irregular in form, and the superimposed skin remains unaltered in colour."

This, with a few observations upon the treatment, constitutes all our author has to say upon the subject of chronic abscesses. The peculiarities of this form of abscess, its differential diagnosis, the question as to the propriety of artificial opening, and the consequences of such plan, are entirely unnoticed; upon these points the book is completely barren of information. How, may we ask, could any, even a first year's student, glean as much knowledge upon the subjects alluded to from Mr. Pirrie's volume, as would satisfy his own inquiries? Mr. Pirrie may answer, that his work was chiefly designed for those

students who have attended his lectures, being a means of refreshing or assisting their memory, but then the utility of the book becomes very limited indeed; it can never serve for the instruction of students generally; so that our author can scarcely expect that his secondary object, which may be inferred from the expression,—"I would venture to hope that others may find it not unserviceable,"—can be realized.

We now leave the subject of inflammation, and passing by that of wounds and burns, let us pause to consider the next point treated of, viz. fractures, the importance of a knowledge of which cannot be over-estimated. The author commences with fractures of the fore-arm, and proposes to consider them under the following heads:—

"In treating of these fractures, it is proposed to consider—First, the Classification or arrangement of them; second, the Comparative Frequency of Cases belonging to each Class; third, the Symptoms and Nature of the Displacement peculiar to each Fracture; and, fourth, the Treatment proper to each Class."

Fracture of the radius is of every-day occurrence, particularly that form which involves the lower or carpal extremity of the bone; and there is no fracture in the body which, if not carefully and accurately managed, will lead to greater deformity and impairment of motion. We cannot, then, understand why Mr. Pirrie leaves almost unnoticed fracture of the carpal extremity of the radius. Surely, as surgeon to a large hospital, he must be aware that no injury requires a stricter attention to the principles of scientific management than it, and in which, accordingly, the surgical student should be more particularly instructed. Reference is not even made to those works in which a description of this particular fracture is well given; no tribute is paid to the late lamented Mr. Colles, whose account of the symptoms and characters of this injury is unsurpassed,—nor allusion made to the names of Mr. Adams or Professor Smith, who have more recently described its anatomical characters especially, in so admirable a manner.

Fractures of the upper extremity of the humerus are considered under three heads:—First, "Fracture below the insertions of the three muscles, and above the insertion of the deltoid." Second, "Fracture above the insertions of the three muscles into the bicipital groove, and below the tuberosities; or, as it is often called, fracture of the surgical neck." Third, "Fracture of the anatomical neck, or between the ball and tuberosities." But what of the most important fracture that

affects the superior extremity of the humerus, fracture through the line of the epiphysis? Our author has evidently fallen into the common error of confounding together fracture through the anatomical neck, and fracture through or near to the junction of the epiphysis with the shaft of the bone,—an error which has been so clearly exposed in Professor Smith's work. Fracture through the anatomical neck of the humerus is a rare accident: and it appears to us physically impossible that it can occur except as the result of powerful direct violence; whereas fracture through or near to the line of the epiphysis is far from being uncommon, and may take place from a very moderate amount of indirect force. An excellent representation of this latter fracture is to be met with in Professor Smith's work, and in an article recently published by Mr. Adams in the Cyclopædia of Anatomy and Physiology.

Fractures of the cervix femoris are divided into three classes:

"1st. Intra-capsular transverse fracture, so named from its being within the capsular ligament, and nearly forming a right angle with the long axis of the neck of the femur.

"2nd. Extra-capsular transverse fracture, when the fracture is without the capsular ligament, and the neck is broken off at its junction with the trochanter major.

"3rd. Oblique fracture of the neck, extending through the trochanter major. This fracture may be partly within, and partly without the capsular ligament."

In speaking of eversion of the foot in intracapsular fracture, he says:—

"In addition to the tensor vaginæ femoris and anterior parts of glutæus medius and minimus, the two ischio-tibial muscles, namely, the semi-tendinosus and semi-membranosus muscles, should be enumerated as rotators inwards. When the foot is advanced, they prevent the heel from being so much turned inwards as to obstruct the other foot; but since they are more relaxed than usual by the shortening of the extremity, they can in this fracture have no effect in counteracting the powerful rotators outwards. Eversion does not take place to its full extent for some hours, as the contraction of the muscles is gradual."

Again he remarks, "although eversion is the usual position of the foot in fracture of the neck of the thigh bone, it is necessary to remember that inversion is occasionally found."

"As to the occasional occurrence of inversion, there is now no

doubt, but much difference of opinion exists as to its cause. Some have supposed that the capsular ligament remaining entire in the front of the joint, and retaining an attachment to the bone beyond the fracture, might cause inversion; but although this condition might possibly prevent eversion, and even that is doubtful, it could have no effect in causing inversion. Others agree with Baron Dupuytren, who attributes the direction of the foot in every fracture of the neck to the relative positions of the fractured portions; and if this explanation be not correct, the cause of inversion in fracture, entirely within the capsular ligament, remains still undiscovered. Mr. Guthrie has explained, in a most satisfactory manner, the cause of inversion in some fractures, without the capsular ligament. If the fracture be so situated, that the attachments of the rotators outwards, inserted into the digital cavity, are connected with the fragment between the fracture and the joint, and the attachments of the anterior fibres of the glutæus medius and minimus to the anterior part of the trochanter major, are connected with the bone beyond the fracture, then the anterior fibres of these muscles will produce rotation inwards. This explanation, however, though most satisfactory in certain fractures without the capsular ligament, will not apply to fractures entirely within it."

Here we shall only ask, why is there no mention made of impacted fracture of the neck of the thigh bone?

Fracture of the lower extremity of the fibula our author says, "is easily discovered."

"Fracture of the lower part of the fibula is easily discovered. In addition to the presumptive signs of fracture, the nature of the injury is manifested by an inequality of the bone at the broken part, and unnatural mobility of some portion of the lower end of the fibula; crepitus, perceptible on grasping the leg with one hand, and pressing the foot inwards and outwards with the other; an angular depression at the situation of the fracture; distortion, with some unnatural mobility of the foot from side to side, and a change in the point of incidence of the axis of the limb upon the foot. Many of these symptoms disappear, when reduction is effected by force applied to the foot, but they return when the force is discontinued."

We cannot agree with him, that fracture of the fibula is always easy of discovery; the diagnosis is sometimes most difficult, and numberless are the instances of permanent lameness from a want of recognising this lesion. And here we may notice "a new means of diagnosis in fracture of the fibula above the malleolus," by M. Maisonneuve[a].

[a] Bulletin Thérapeutique, vol. xl. p. 128.

"With the four fingers of the left hand," says he, "if it is the left leg we have to deal with, we embrace the anterior and internal surface of the tibia, so that the thumb of the same hand may be applied firmly upon the posterior edge of the fibula, a little above the external malleolus. With the four fingers of the right hand we embrace the sole of the foot, so that the thumb of the same hand may be applied on the most projecting part of the internal malleolus; then, by alternately exerting firm pressure with both thumbs,

the following sensation will be experienced. At the moment when the right thumb presses on the malleolus, the left thumb perceives the upper surface of the lower extremity, which is pushed out, so that its form and direction can be easily recognised. When, on the contrary, ceasing the pressure on the malleolus, we press with the upper thumb, the extremity of the fragment returns to its place, and the projection is not to be perceived; it is then by moving the lower fragment to and fro, by means of a gentle pressure, that the mobility and the abnormal projection are to be detected. Experience has proved to me that we can thus distinguish, without difficulty, fractures by divulsion of the lower end of the fibula.

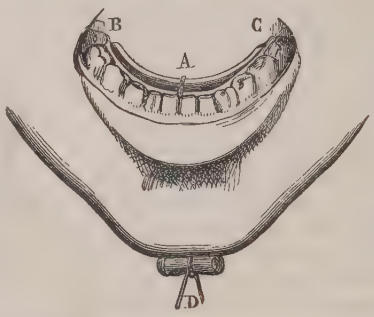
"Some may, perhaps, imagine that the *manœuvre* which I describe is nothing more than that commonly employed for the detection of mobility in all fractures, and especially that indicated by Dupuytren for fracture of the fibula. But this is not the case. In ordinary fractures, in fact, and according to Dupuytren's special directions for fractured fibula, we try to detect mobility and crepitation by pressing alternately upon the upper and lower fragment; while in the manœuvre which I recommend, it is upon the two ends of the lower fragment solely that pressure should be exercised."

Why Mr. Pirrie makes no allusion to fracture of the lower jaw we cannot understand; does he imagine that it is unnecessary for the student to be acquainted with this lesion?

In the forty-second volume of the Bulletin Thérapeutique[a], "a new method of treatment for fractures of the alveolar portion of the lower jaw," is described by M. Robert, and to it we would direct especial attention.

[b] Page 24.

"A piece of lead, half a line in thickness, is to be moulded exactly upon the lingual border of the maxillary bone A, extending backwards beyond the osseous fragments B C. To retain this plate in its place a needle, armed with a silver thread, should be passed along the internal surface of the maxilla, through the floor of the mouth, and drawn outwards; the other extremity of the thread, conducted in a similar manner along the external surface of the bone, should be brought out through the same orifice[a]. The two ends of the thread thus drawn out under the chin, embracing the fragments in the loop which they form, are to be fastened round a small roll of adhesive plaster, D, and twisted until the plate B C is firmly fixed."



In a note, M. Debout recommends the substitution of zinc or silver for lead, fearing that ill consequences might result from the retention of the latter metal in the mouth for the time that would be necessarily required. Neither of these metals, however, could be so easily moulded to the proper shape as lead.

In treating of dislocations Mr. Pirrie draws largely upon Sir Astley Cooper, and introduces many copies of the illustration of the different dislocations, and their mode of reduction, to be found in his valuable work; the student may glean much useful information in a small compass in this part of our author's volume.

Now, of all the dislocations which occur, there is none to which more attention has been paid, in consequence of the extreme difficulty of reducing it, than dislocation of the first phalanx of the thumb backwards upon the metacarpal bone. Numerous have been the methods devised in order to effect the reduction of this dislocation, which, in cases of any length of standing, often proves perfectly invincible. Mr. Pirrie says:—

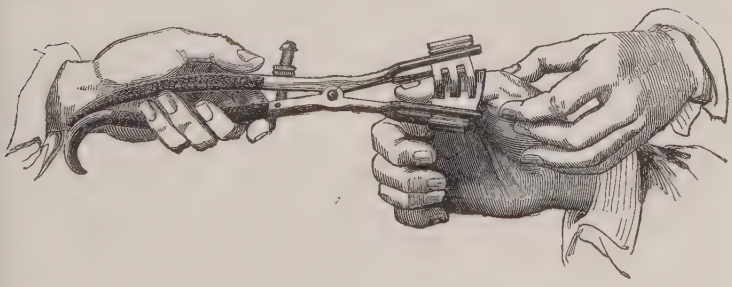
"The proposal has been suggested of dividing one of the lateral ligaments with a couching needle, or a very small knife, when reduction is impossible by ordinary means. The best authorities, in general, unite in condemning this practice on account of the fre-

[a] "The engraver has committed an error in the adjoining drawing; the anterior portion of the metallic loop should be represented as passing in front of the incisor teeth."

quency with which tetanus is induced by injuries of tendons and ligaments connected with the thumb. Mr. Syme, however, says:—'In cases where the difficulty proves insuperable, one of the lateral ligaments may be cut, which would certainly be better than leaving the bone unreduced, as has sometimes been the case.'"

In the forty-first volume of the French Journal[a] already quoted, some very excellent remarks by M. Demarquay upon dislocation of the thumb backwards, together with a new method of reduction, are contained:—

"If the cause of the irreducibility," says he, "depends neither on the persistence of the lateral ligaments, nor the intervention of the anterior ligament, it must exist in the muscular plexus which clasps the head of the metacarpal bone; traction of the thumb, and propulsion of it forwards, as recommended by M. Gerdy, tend only to fix it more and more firmly, and, to overcome this resistance, great force is requisite, and even this is not certain of being successful. What is necessary is to disengage the head of the bone from the muscular plexus, in which it is, as it were, intertwined, and this not by cutting the outer portion of these muscles, as first proposed by M. Malgaigne, whether including the skin in the section, or by the subcutaneous method as proposed by M. Biechy. By the following process the head of the metacarpal bone can be readily disengaged, and the dislocated thumb reduced. The hand and fore-arm being placed between pronation and supination, the surgeon seizes the extremity of the thumb with the 'reducing forceps'[b] held in his right hand, and exerts traction in the direction of its axis. With the



thumb or the forefinger of his left hand he pushes backwards the head of the metacarpal bone projecting into the palm of the hand. After exerting a certain amount of traction, he works with a rotatory movement from within, thus causing the muscular fasciculus which forms the external part of the plexus to glide over it, and thereby to remove them from before the head of the bone, and pre-

[a] Page 495. [b] See the tenth volume of our present Series, page 118.

vent them from interfering with the further steps of the operator. The surgeon then continues the traction, and when the phalanx has arrived on a level with the head of the metacarpus he makes a sudden movement of flexion, and the reduction takes place."

Passing over the subjects of affections of the osseous system, diseases of the joints, and curvature of the spine, we will dwell for a few moments on Mr. Pirrie's observations on diseases of the arteries. Aneurism has ever been looked upon as particularly worthy of the attention both of the physician and the surgeon; its pathology is most interesting; its treatment, both medical and surgical, highly scientific, and its nature or character more varied than that of almost any other disease we have to study. Hence, much has been written, from time to time, upon the subject of aneurisms, but, in consequence of the matter being diffused so widely through a multiplicity of books, the student cannot be expected to acquire as much knowledge of this disease as its importance demands. Our author, we are happy to perceive, has done justice to this important department of surgery, and has furnished the student with a short, but very clear and satisfactory and well-arranged account of the disease, its mode of formation, its varieties, its consequences, and its treatment. We are, moreover, glad to find that the author deals fairly with the question of pressure as a means of cure in aneurism, and accords to it that value which it so justly deserves, but which, nevertheless, is denied to it by a few, in the face of the most weighty statistical proof that need be adduced:

"The treatment of aneurism by pressure has lately been revived, but on new and improved principles; and the new mode of employing it has been attended with so great success, that it may now be said to be completely established. The ultimate object aimed at being the consolidation of the contents of the aneurismal sac, its attainment is sought by weakening the force of the circulation through the aneurism; and for this purpose pressure is applied to the artery leading to the aneurism, at a considerable distance from the tumour, and employed to an extent only to weaken the force of the circulation, and not to produce obliteration of the artery. As this does not require severe pressure, the objections made to the former mode of treatment—that it was impracticable on account of the pain, and that the pressure often gave rise to severe and dangerous local results, cannot be urged against the method which is now employed."

Diseases of the veins also form an extremely important subject for study,—one, too, which has been very culpably neglected. No doubt, much difficulty attends the investigation,

but this is a reason why we should labour with the greater energy to surmount it, and to disperse the obscurity which overhangs the subject. Phlebitis is the most fearful disease with which the practitioner has to contend; it is the surgeon's chief scourge, meeting him often at every path, frustrating his best-planned operative undertakings, and itself resisting every plan of treatment that can be devised to make it yield, or even to mitigate its symptoms. A surgeon performs an amputation under, perhaps, the most favourable circumstances; or he excises a tumour which has been a source of inconvenience for years; or he redresses some deformity of the most disfiguring nature, of which the sufferer from it is most anxious to be rid; everything goes on well for a few days, affording the strongest encouragement to both patient and operator, when about the eighth or tenth day a violent rigor supervenes, phlebitis sets in, and sinking rapidly ensues. Is not such a malady well worthy of close investigation? Still, we are utterly in the dark regarding many most important particulars connected therewith. Mr. Pirrie has collected nearly all that is known upon this disease, especially the "diffuse suppurative phlebitis;" and a great deal of information may be obtained from this chapter, short though it be.

"The sequelæ which have their seat in the capillary system consist of lesions which have been designated by the appellations 'lobular inflammations' and 'lobular abscesses.' These secondary infiltrations are most commonly found in the lungs and liver, especially in the former; they usually present themselves in the form of deposits disseminated through the parenchyma of those viscera, and differ from abscesses in being neither encysted nor concentrated into one place."

We must say, however, that we have as often found the secondary purulent deposits in the lungs perfectly encysted as infiltrated.

After pointing out the manner in which the phlebitic abscesses in the lungs and liver can be accounted for, the author proceeds:

"The origin, however, of purulent collections in other organs still remains obscure. Here, indeed, the above explanation is inapplicable, founded, as it is, upon the inability of the pus-globules to permeate the minute capillary vessels of the lungs. Günther found that these deposits were formed *subsequently* to those in the lungs, and believed that they originated from pus being taken up from the diseased parts of the lungs by the pulmonary veins, and thus carried into the greater circulation. Were this explanation

correct, phlebitic abscesses must, necessarily, exist in the lungs, wherever such deposits are found in the capillary system of the greater circulation. To ascertain this, I have compared a large number of cases, observed partly by Balling, Dance, Arnott, and others; partly by myself. Amongst them, however, there are only two (one related by Sasse, of purulent deposits in the liver, and one by Dance, of purulent exudation within the wrist-joint), in which the non-existence of pulmonary abscesses is established by careful examination after death."

Next comes the subject of hernia. The author gives the following important considerations upon the operation for strangulated hernia in general, and in the sentiments expressed upon each of the heads we fully concur:

"1. The circumstances under which it is justifiable or necessary to resort to the operation;—2nd. The importance of having recourse to operation at an early period, and of abstaining from handling the hernia before the operation, more than is necessary for the fair and skilful use of the taxis, while the patient is under the influence of the most powerful auxiliary—chloroform;—3rd. The indications which are to be fulfilled by the operation;—4th. The conditions which render it impossible, and those which make it improper, to return the hernial contents;—5th. The mode of procedure in regard to the hernial sac;—6th. The anatomy and treatment of abnormal or artificial anus;—and 7th. The treatment after operation."

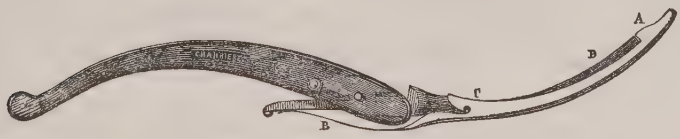
In speaking of the fifth consideration, "the mode of procedure with regard to the hernial sac," he says:

"It is a question of great importance, in reference to the operation for strangulated hernia, which of the two following modes of proceeding in regard to the hernial sac is the more advisable; namely, that of opening the sac, and dividing the stricture from within; or that of dividing the stricture, and replacing the parts without opening the sac. Of these two, technically called the *intra-peritoneal* and *extra-peritoneal* modes of division the former is that which, except in a limited number of cases, has received the sanction and adoption of most surgical authorities in these islands. It appears certain that, in the great majority of cases, it is by that mode alone, that it is possible to accomplish the two grand indications which it is desirable to fulfil by the operation; namely, the removal of the pressure by division of the stricture, and the return of the hernia. The fulfilment of the former, namely the removal of the pressure by division of the stricture, is essential to the safety of the patient; and that of the latter, the return of the hernia, exceedingly desirable when practicable and proper."

We entirely agree in the advisability of opening the sac in every instance. Perhaps in the case of an intestine which has

suddenly protruded for the first time, if we operate shortly after symptoms of strangulation have appeared, it may not be unobjectionable to divide the stricture outside the neck of the sac, and not to open the latter, but in no other instance, in our judgment, ought such a plan to be followed. We are aware that very high authorities, even at the present day, advocate the advantage of following Petit's method of operating, but we feel perfectly convinced that their adhesion to it arises from a false view they take of the effects of opening the sac. In truth, the risk of peritonitis springs not from it, but from delaying the operation too long. In strangulated hernia, the operation cannot be performed too early.

The knife in general use for dividing the stricture in hernia is that recommended by Sir A. Cooper, and of which a representation is given by Mr. Pirrie. The annexed woodcut, taken from the Bulletin de Thérapeutique[a], displays a



bistoury, the invention of M. Grzymala, and which is said to possess two advantages over Sir A. Cooper's, viz., a wider cutting edge, and perfect safety as regards the intestine in dividing the stricture. For our part we prefer Cooper's knife, and if properly managed, it is as safe, and certainly more easily controlled, than any other. If we were inclined to abandon Cooper's bistoury, we have in Trant's knife every requirement for the safe division of the stricture; but we consider that no instrument which dispenses with the finger as its guide can offer the same advantages as those which Sir A. Cooper's knife affords.

The author makes the following classification of wounds of the abdomen, with a view towards the clearer explanation of the principles of their treatment:—

"1st. Wounds which simply penetrate the cavity without injuring any of its contents;—2ndly. Wounds which not only penetrate the cavity, but injure some of the contained viscera, without protrusion of the wounded part;—3rdly. Wounds attended with protrusion without any wound of the protruded part;—and, 4thly. Wounds accompanied not only with protrusion, but also with injury of the protruded part."

[a] Vol. xli. p. 116.

With respect to the second class he says:—

"Important indications are, to guard against all exciting causes of extravasation either of blood, or of visceral contents, and against all causes of inflammation; and if inflammation should occur, to endeavour to subdue it by proper treatment. It is, therefore, necessary to abstain from all imprudent exhibitions of stimuli for the removal of the collapse consequent on the injury, to preserve the body at perfect rest in the horizontal position, to enjoin the use of the mildest ingesta, and to abstain from the employment of purgatives, as being calculated, until the injury has been healed, to do harm not only because, by the irritation they produce, they increase the danger of the occurrence of inflammation, and its intensity when it does occur, but also, because by the additional peristaltic motion they increase the risk of extravasation of intestinal contents, and interfere with the process by which nature repairs the injury. These, with all the details of antiphlogistic regimen, constitute important parts of the preventive treatment; and when inflammation occurs, the remedies proper for that state must be promptly applied. If there be reason to suspect injury of the bladder, the catheter should be kept introduced to diminish the chances of extravasation of urine."

The author has, however, forgotten altogether to call attention to the most important practical point connected with the treatment of this particular class of wounds of the abdomen—the administration of opium. Many years ago Drs. Graves[a] and Stokes showed the great advantage of large doses of opium in rupture of the intestine from ulceration. Its utility in this respect is now universally admitted. But if opium be calculated to fulfil the required indication in ruptured intestine from ulceration, it is more especially suitable in wounds of that viscus, inflicted by a sharp instrument; for here, if the intestine can be maintained at perfect rest, completely motionless for some hours, nature may work the most salutary effects through the instrumentality of the adhesive process. The opium must be given in very large doses, in order to tranquillize, almost indeed to paralyze, the intestine; and thus, by arresting all peristaltic movements, to diminish the chance of extravasation of fæces occurring.

"The above are the proceedings which, on the whole, appear to be the most judicious in the treatment of the different varieties of wounds in the intestine, and they are recommended by the great majority of British authorities of the present day. They are very

[a] Graves' Clinical Medicine, by Neligan, vol. ii. p. 244; and Dublin Hospital Reports, vol. v.

different, however, from many of the singular modes of procedure adopted formerly by many surgeons, and still practised by some. In some cases, ligatures have been employed in great numbers; in others, sutures of every possible form have been used; most extensive wounds of the intestine have been sewed up, and replacement effected; in some instances, the ends of the ligatures have been cut off, the ligatures having been employed only for preserving apposition of the edges of the wound in the intestine; and in others, the ends have been left and kept in the external wound, the ligatures being used partly for procuring apposition of the edges of the wound of the intestine, and partly for keeping that wound near the external one."

As an example of the ingenuity displayed in stitching up wounds of the intestine, we may call attention to the subjoined woodcut, which represents the plan proposed by M. Bouisson of Montpellier for closing both longitudinal and transverse wounds of the intestine. The particulars of it are to be found in the fortieth volume of the Bulletin Thérapeutique[a].

"In longitudinal wounds (Fig. 1) slender pins of a length pro-

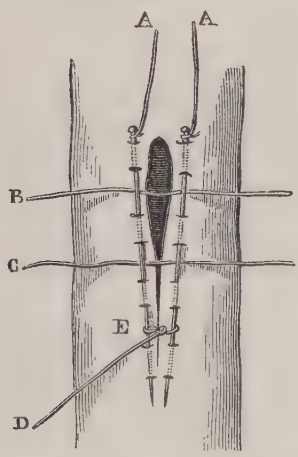


Fig. 1.

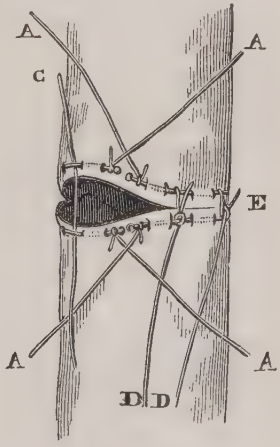


Fig. 2.

portioned to that of the wound, to which threads A A have been previously attached in order to enable them to be readily withdrawn, are inserted in the entire thickness of each lip of the wound, parallel to and about a line from it. The pins alternately transverse the serous and mucous coats, but in an undulating manner, so as to leave several corresponding portions free on both sides. The threads

[a] Page 157.

B C pass under the bridges thus formed, and are so arranged that the surgeon, by knotting their ends, can draw together the needles, and, consequently, the lips of the wound; in so doing he presses inwards with a probe the edges of the mucous surface, so that the serous membrane of the opposite lips of the wound may be in perfect apposition. No escape of the intestinal contents can then take place into the peritoneum. The threads attached to the needles are drawn out at the superior extremity of the abdominal opening, and the uniting threads as at D, one end being previously cut close to the knot E, and brought out at its inferior extremity. A simple modification of this plan, as shown in Fig. 2, adapts it for transverse wounds."

We are sorry to find that Mr. Pirrie affords so very little information upon the important subject of calculi in the bladder. A short but tolerably fair account of the different operations of lithotomy is given; but there is a woeful lack of information as regards lithotrity—an operation which is gaining ground every day, and with which, accordingly, the student should be fully acquainted.

Affections of the testis are also very quickly run over; and affections of the genito-urinary system, nearly the most extensive subject in surgery, receive a most summary disposal at the hands of our author. Positively, no regular description is given of stricture; its pathology and varieties are entirely overlooked; and the effects it produces upon other parts not even alluded to. As to diseases of the prostate gland, with the exception of a few lines upon inflammation of the organ in connexion with gonorrhœa, they are altogether unnoticed. Syphilis receives no greater favour from the pen of our author. Does Mr. Pirrie consider that the student need not be instructed upon these subjects?

The next part of the volume is the operative department, in which is given a short description of the different amputations, and of ligature of the principal arteries, illustrated by drawings, chiefly taken from Mr. Liston's excellent work. The student may here refresh his memory upon operative surgery with much advantage.

We then have an account of affections of the rectum, and a brief notice of diseases of the eye and lachrymal apparatus.

Affections of the nose and mouth are also shortly described; the pathology of the principal tumours is next given; and the volume closes with a few observations upon diseases of the breast.

We have now taken a rapid survey of Mr. Pirrie's work upon the Principles and Practice of Surgery. If we have some-

times criticised rather too severely, the author may feel confident that we make great allowances upon the ground of the impossibility of constructing a complete work upon surgery, and that we accord to him the full acknowledgement of having, as we before expressed it, furnished the students of his own class with a clear and concise account of many of the difficulties in surgery. It is because the volume has claims to merit in some respects, that we have been induced to take the author to task for those defects we exposed in many parts, and which have limited its utility.

We had marked many other illustrations for selection from the volumes of the Bulletin Thérapeutique enumerated at the head of this article, but the space already occupied with this review compels us to postpone their insertion in our pages until a future occasion.

Lectures on the Nature and Treatment of Fever. By D. J. CORRIGAN, M.D.T.C.D., M.R.I.A., &c., &c. Dublin: Fannin and Co. 1853. Royal 12mo, pp. 104.

THE application of auscultation to the diagnosis of diseases of the chest, availed of as regarded the lungs almost immediately on its discovery by Laennec, made much slower progress, and was for several years less directly of value, as an aid in the investigation of deranged conditions of the heart. Amongst the earlier labourers in this then comparatively neglected field of inquiry, two members of the Dublin School stand pre-eminently conspicuous, and to them the profession owes much of the precision in knowledge which has been attained by the use of the stethoscope in the examination of cardiac diseases. Of one of these physicians, Dr. William Stokes, we shall not here speak, as we expect to meet him very soon in his work on diseases of the organs of circulation, which we have reason to know will be immediately published; but of the labours of the other in this domain of pathology, a short notice may well precede our review of his clinical essay on Fever now before us.

Engaged actively in examining the connexion between the sounds of the heart and its physiological action, Dr. Corrigan's attention was especially directed to an organic disease of the circulatory system, then but very imperfectly understood; and if upon the value of his practical observations on it his fame alone depended, it would suffice to stamp him as a physician of original powers and of painstaking inquiry. In the thirty-seventh volume of the Edinburgh Medical and Surgical

Journal—for our own school did not at the time possess a literary representative—will be found his essay on "Permanent patency of the aortic valves," in which he pointed out the symptoms and physical signs attendant on the organic changes in the heart to which this result was due, and indicated the correct principles of treatment for its relief, which were at the time completely misunderstood. The physical signs, on the presence of which he contended the diagnosis should be based, are now too well understood, and their correctness too universally admitted and valued, to require that we should enumerate them here; but the following observations present so clearly the principles on which the treatment of the disease should be conducted, that we feel no apology is requisite for now reproducing them, premising that, at the time they were penned, the invariable rule of practice was to employ bleeding and debilitants in every case in which the heart was hypertrophied.

"No one thinks of directing measures to diminish hypertrophy of the muscular tissue of the stomach in narrowing of the pylorus from scirrhus, or of the bladder or rectum in stricture of the urethra or intestines. In these instances the hypertrophy is recognised as a provision of nature to make the power of the part equal to the obstacle it has to overcome; and yet this simple principle seems to have been entirely overlooked in diseases of the heart, as if this organ possessed muscular fibres of a different nature from other organs, or as if, in adapting itself to obstacles affecting its action, it follows laws different from other muscular parts. The consequence of the neglect of this principle has been that, too often, in the treatment of a valvular alteration in the heart, there has been a constant struggle between nature and medicine. Nature has been making the organ equal to its task; while medicine has been directed to counteract nature's efforts, and by weakening the organ to render it totally incapable of its task. The repeated bleedings, the starvings, the enforcement of debilitating measures, are totally unsuited to the disease we are considering. Instead of such treatment, the measures most beneficial are those which, by strengthening the general constitution, will give a proportionate degree of vigour to the muscular power of the heart, and thus enable it to carry on the circulation in the absence of that assistance which it ought to receive"[a].

Since the publication of the essay from which the foregoing extract is taken, and which we regard as classical in the medical literature of the present century, Dr. Corrigan has published

[a] Edinburgh Medical and Surgical Journal, vol. xxxvii. p. 240.

several valuable contributions to medicine in the pages of our former and of our present series, and in those of the London Medical Times and of the Dublin Hospital Gazette: the latter of which, during its short career, derived its chief excellence from his pen. Amongst other contributions of his were some Lectures on Fever: these, he now informs us in his Preface, are "re-arranged and enlarged into a continued and connected series" in the volume the title of which is prefixed to this notice; telling us, moreover, "that they are not intended to be a lengthened essay upon the subject, and ambition no farther than to present to the advanced student and junior practitioner an explanation of principles applied to the nature and treatment of fever, which have been deduced from long-continued and careful clinical study of the disease."

In the ten lectures of which the volume consists, we are presented, then, with a concise yet admirably practical essay on fever,—a disease for the observation of which no better field could be afforded than our metropolis, where it is always located, and where epidemic outbreaks of it frequently and with a certain degree of periodicity occur.

In the first lecture the author makes his declaration of faith as regards the nature of fever, avowing that he agrees with those who regard it as a *primary* disease, and not *secondary* or consequent on some local or structural lesion, ignoring altogether the so-called typhoid fever, which he describes in his tenth lecture as "follicular enteritis."

"The conclusion, then, at which we must arrive is, that fever, or the aggregation of functional derangements, to which we give the name of fever, is not dependent on any structural lesion whatever. But if it be not dependent on any structural lesion,—if no structural lesion be necessarily present,—if even, more than this, death will take place without any structural lesion whatever, the conclusion is inevitable, that fever is to be considered as a primary disease of function, having an existence independent of, and capable of proving fatal without, any local or structural lesion.

In concluding his first lecture, Dr. Corrigan recognises the utility, for practical purposes, of the division of fevers with reference to the function chiefly affected; the simultaneous lesions of all the bodily functions constituting the component parts of an aggravated case; the vital function which is chiefly deranged "stamping the characteristic feature on the individual case," and thus acting as a guide to the treatment. This is a most important point to be remembered by the young practitioner, who is too apt to treat fever by its name, follow-

ing a routine plan in every case; and we are therefore well pleased to see that the author throughout the volume constantly dwells much upon it.

The second lecture treats concisely but clearly of the division of fever into two forms: inflammatory fever and typhus. The latter is described as presenting two well-marked forms or subdivisions; "the first when the attack sets in with a heavy congestive stage, somewhat resembling the cold stage of ague; the second when the onset of the fever is gradual or almost treacherous, its commencement being so insidious that there is often difficulty or an impossibility in saying at what precise time the fever commenced." The following is Dr. Corrigan's graphic description of the second form:—

"The second form of typhus fever might truly be called insidious fever. It is a form you should well remember. The first deviation from health is perhaps scarcely appreciable in most instances, and it is most often very difficult to define its commencement. The patient has been probably for many days, as he describes his state, merely ailing, and perhaps continues at his ordinary pursuits up to the moment of his seeking for advice, which is probably on the sixth or seventh day of fever, and even then he hardly believes himself ill, and only seeks assistance or consents to remain in bed at the urgent solicitation of his family, who remark that he looks heavy and ill. When questioned at this period, he says he only feels weak, and without appetite, and disinclined to leave the bed; and he attributes the flying pains, which he only mentions when questioned, to his remaining so long in bed. When such a patient is first seen there seems at first sight little to excite alarm. There are only the creeping pains in the back or limbs, or in both; there is perhaps no headach; the pulse is not above 88, and the tongue is only slightly coated and of a light grey colour: yet such a case will almost certainly be severe and continued, and in a few days more, life may be in a mere balance. Were it not for ample experience, it would be quite impossible to anticipate that in such cases as this described, the danger could soon be so urgent. This form of fever now described will, however, go on with increasing aggravation to the ninth or tenth day, when the patient may become delirious, and quickly afterwards, perhaps, comatose; or, remaining still without sleep, becomes most restless, the whole nervous system continuing in an uninterrupted state of agitation, resembling delirium tremens; the pulse rises in frequency, and sinks in strength; and the case becomes an accumulation of symptoms constituting the worst form of typhus fever. What is it that makes the danger so great in this form of fever? There is neither local lesion nor particular symptoms of great urgency for several days, but every vital function is more or less deranged, and although the derangement of each may be individually of no great degree, yet the aggregate amount, when

all are more or less affected, becomes at last sufficient to overpower the whole system, and to terminate life."

The question of crisis and critical days is next touched upon, the author avowing his disbelief in there being any *specific* days of the duration of the disease, which can be regarded as critical. The five following lectures are devoted to a general survey of fever viewed according to the predominant lesion in any special case, and the treatment requisite for each, in the following order:—First, Derangement of the cerebro-spinal functions. Second, Lesion of the function of nutrition, including assimilation, secretion, and excretion. Third, Lesion of the function of circulation. And—Fourth, Lesion of the respiratory function. Illustrative cases are constantly introduced throughout, so that the character of clinical instruction, and the benefits derivable therefrom, are well maintained in every page.

In the eighth lecture we are presented with a summary of the author's views of the general treatment of fever, what combinations of remedies may be required where several functions are simultaneously deranged, and how the treatment of special cases may vary, although the general principles which direct the treatment are fixed. The lecture, short though it is, abounds in valuable practical precepts. The following observations on the effect which the type of the fever has in modifying the treatment, are especially deserving of attention:

"We shall always at once discover the type if we carefully analyze the functions affected. The type will be determined by the function most affected; and local disease, should it arise, will most frequently occur in the organs principally connected with the performance of that vital function, whatever it may be. I think that the inference will now naturally occur, almost without observation on it, that you must not attach yourselves in practice to any particular dogma or line of treatment; but meet each lesion of function with its appropriate treatment; the principles that guide its application remaining steady, but the details necessarily varying; you must neither become exclusive adherents of treatment, by wine nor by bark, by bleeding nor sudorifics, by purgatives nor diuretics; but ever bear in mind, that each lesion of function has its own remedy, to be regulated in application and in degree by the lesion of function which it is intended to relieve. Guided by the same principles, recollect, that treatment is to be regulated not by the circumstance of its being the fifth, sixth, or tenth day of fever, but by the state of each particular function, day by day. Do not ask what is the day or stage of the fever on which any remedy is to be employed, but, what is the state of the function at the moment, to be combated at the particular time.

"One case of fever may require as much wine on the second day of its attack as another on the twentieth; and the bleeding or leeching that will not be borne in one case on the third day will benefit another after a lapse of many days."

The ninth lecture is devoted to a consideration of the complications and sequelæ of fever; and in the tenth and last lecture, as we before remarked, acute follicular enteritis—typhoid fever—is shortly noticed.

In our review of this volume we have attempted rather to indicate its contents than to criticise the matter or the manner thereof, for the views of a physician of the sound judgment and great practical experience of Dr. Corrigan are as much above the comment of the critic as they need not the support of his pen to enhance their value. Yet we must be permitted to express the gratification we feel at the publication of another of those valuable practical works for which the Irish school of medicine has become so celebrated, and to tell our readers that in Dr. Corrigan's Clinical Lectures on Fever, they will find a collection of aphorisms, a knowledge of which will relieve them from many a difficulty at the bedside of their patients.

Contributions to Obstetric Pathology and Practice. By James Y. Simpson, M. D., Professor of Midwifery in the University of Edinburgh. Part I. Edinburgh: Sutherland and Co. 1853. 8vo, pp. 80.

We are very glad that Professor Simpson has determined to reprint the more important of the papers with which he has, with so lavish a hand, enriched the pages of the Edinburgh Monthly Journal; for although most, if not all, of our readers are familiar with them, we are quite sure that they will rejoice to be able to obtain them in a separate form. Of the value of the present Part there can be no question. Many of the subjects are such as could only come under the observation of a physician in very extensive practice, and they are handled in a way that one of consummate ability only could treat them. Moreover, it is an additional pleasure to us that this Part can give rise to little or no controversy. Upon one of the subjects only has there been any dispute, and that subject we shall defer until we have an opportunity of entering fully upon it.

The first paper introduces the use of chloroform in infantile convulsions; and judging from its effects in puerperal con-

vulsions, and from the experience Dr. Simpson has here recorded, we have no doubt that it will be found a remedy of great value, especially, but not solely, in those which are sympathetic, after all sources of irritation have been removed. We can also confirm Dr. Simpson's statement of its great power in pertussis, from our own experience.

We think that the absence of pain and local distress in cancer uteri is far from uncommon. We could add several examples to the cases Dr. Simpson has given; in one, the lady, when dying, assured us that she had never suffered any pain at all.

The arrest of the usual diminution of the uterus after delivery, or its excess, is a very curious subject, which has not hitherto, so far as we know, been noticed. Why the ordinary contraction should not take place, it is difficult to discover; but the author states that in a lesser degree it is not uncommon, "especially when inflammatory or febrile action supervenes, and interferes with the phenomena of the puerperal state. It is often, for example, observable both during life and after death in women who are subjects of puerperal fever, pelvic cellulitis, and phlegmasia dolens. Chronic hypertrophy of the uterus, in any excessive degree, from morbidly retarded or arrested involution, is more rarely met with. I have sometimes, however, seen it ten or twelve weeks subsequent to delivery, in the form of an apparent tumour, twice or more the bulk of the normal uterus."

The opposite condition of the uterus is also of great interest. Dr. Simpson relates one very remarkable case in which it occurred after the patient had borne a child; and he mentions having seen many in which atrophy or an undeveloped condition of the uterus existed in connexion with amenorrhœa. In such cases it is probably a fair inference that the ovaries were equally undeveloped.

The essay on paracentesis in ovarian dropsy is of great value. Instead of the sitting posture, with a bandage encircling the abdomen, Dr. Simpson advises that the patient should lie on her side, right or left according to the ovary affected, with the abdomen overhanging the edge of the bed. In this position, he thinks a bandage unnecessary at the time, although it may be useful afterwards, particularly if the abdominal parietes be much relaxed. Whether the puncture be made through the linea alba or the linea semilunaris is, "perhaps, of little moment, provided only the trocar is introduced in a situation in which the fluctuation is very distinct, and the parietes of the cyst thin and equal, and in which, therefore, the

instrument easily reaches the cavity of the cyst." A very good summary of the risks and obstacles to the operator is appended, including some which have rarely been noticed before. Further on we find an exceedingly interesting chapter on inflammatory and non-inflammatory ruptures of ovarian cysts, with cases. We cannot resist giving the conclusions deducible from Dr. Simpson's experience on this important subject, although the quotation is somewhat long:—

"1. The cysts forming an ovarian dropsy occasionally rupture; first, from inflammatory effusion into and distention of their cavities; or, secondly (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter), they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

"2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous and generally fatal peritonitis.

"3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distention of its cavity, and the fluid effused into the sac of the peritoneum is consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

"4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged by this accident.

"5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

"6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

"Lastly, let me add, that as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases; and more particularly in instances in which the great bulk of the tumor is formed by one original large preponderating cyst, or by several cysts broken up and conjoined into one common cavity or cell."

The essay on albuminuria in puerperal and infantile convulsions contains some very interesting facts, and we are inclined to agree with the author's conclusion, that the con-

vulsions and albuminuria are both owing to a morbid condition of the blood. Dr. Simpson is the first, we believe, to record the detection of albumen in the urine of a child attacked with convulsions; and, as he suggests, it may perhaps be found to play an important part in the production of trismus nascentium and scleroma. In two cases of the latter disease, seen by the author, the urine was coagulable.

We should regret the necessity for this brief sketch of Dr. Simpson's *brochure*, were we not sure that its contents will soon be familiar to our readers, if they are not so already. Dr. Simpson has attained such eminence in his profession, and his experience is now so extensive, that whatever he writes will, we are certain, be received with respect and attention. We can assure such of our readers as need the assurance, that the First Part of, we hope, a very extended work will amply repay their most careful study.

On Lithotrity and Lithotomy. By WILLIAM COULSON, Surgeon to St. Mary's Hospital. With numerous Woodcuts. London: Churchill. 1853. 8vo, pp. 388.

THE excellent work of Mr. Coulson upon "Diseases of the Bladder," which we had recently the pleasure of reviewing[a], afforded a good guarantee that any addition which might be made to this subject from the same source would prove a valuable offering to the profession. The anticipations then entertained are now realized; for we consider that the present volume is by far the most complete monograph upon lithotrity and lithotomy that has yet been published, and supplies a desideratum long required. The subject of lithotrity is entered into at large, but clearly and concisely; so is that of lithotomy; and the two operations are contrasted in a fair and able manner.

For the sake of convenience the work may be divided into three principal parts:—1. Lithotrity; 2. Lithotomy; 3. The parallel between the two operations.

1. *Lithotrity.*—There is no surgical invention, the history of which is more curious and interesting than that of lithotrity; those who feel curiosity in tracing the progressive development of mechanical invention will have it largely gratified by studying the historical records of the operation for seizing and

[a] Vol. xiii. p. 388.

crushing calculi in the bladder. They may trace with interest the gradual improvements that have taken place in the mechanism of lithotritic instruments,—from the straight to the curved,—from the rude and clumsy apparatus of Gruithuisen to the simple and efficient lithotrite now in common use,—from the piercer to the percussor,—and from it to the screw, as a crushing force. We have then the various alterations in, and the additions to, the different instruments which have been in vogue at particular periods, thus forming a number of successive epochs which mark the history of the operation of lithotrity, and invest it with great interest.

Mr. Coulson's work opens with the history of lithotrity, and certainly the author has been particularly happy in the manner in which he has succeeded in condensing this part of the subject; thus giving, in a small compass, as much information upon it as can be required by the practitioner. In some more elaborate treatises into which we have looked, we have felt ourselves in a perfect labyrinth, confused with the complicated description of the different inventions, and the changes which have been effected in lithotritic instruments from time to time. Mr. Coulson has stripped the history of lithotrity of all difficulty and confusion, and in a few pages has described all the instruments that have been invented from the earliest to the present date, illustrating them by very beautifully executed woodcuts.

The next chapter describes the treatment preparatory to the operation of lithotrity; and here let us enforce upon those who undertake this operation the great necessity of strictly paying attention to all the particulars of this preliminary step. If they wish to be successful, and to defend lithotrity from the charges of those who are unfavourable to it, they must give full weight to the importance of preparatory treatment. Mr. Coulson says:—

"If we examine the practice of the most successful lithotritist of the present day—one who has performed more than 600 operations—we can hardly attribute his unexampled success to any other cause than the great attention he bestows on these preparatory arrangements. Some surgeons may exceed him in manual dexterity, but none bestow so much care on the medical and accessory points of each case; and hence, I believe, the success of his practice."

This is the strongest argument that can be adduced in proof of the advantages of a proper regard to preliminary treatment. Indeed, from what we have ourselves witnessed, we feel certain that to a disregard of this measure is due the want

of success which attends the operation of lithotrity in a large number of instances.

The third chapter is occupied by an account of the steps of the operation itself. The author gives the following description of it:—

"We have now the instrument in the bladder. The next step is to seize the stone. This is easily done when the calculus is small, and the blades of the lithotrite large. The closed instrument is first directed towards the floor of the bladder, along which the curved part is made to pass, the point being gently turned, now to one side, now to another; as soon as the instrument touches one of the sides of the stone, the female branch is fixed, the male branch is slowly drawn back, and the instrument is cautiously inclined towards the calculus. Should any difficulty be experienced in seizing the stone, from depression of the floor of the bladder or other causes, then the blades are moved in a sweeping direction, with the convexity downwards, from before backwards, along the bas-fond and posterior surface of the bladder; they are then drawn back a little, and the convexity directed to the right or left side, each of which is explored in its turn; lastly, the point of the instrument is directed upwards and then downwards to the space immediately behind the prostate. The instrument should then be carefully rotated, in order to come in contact with the foreign body. This found, the blades of the lithotrite are cautiously opened, and the instrument is pressed on the stone laterally, after which the blades are closed with the same caution, every effort being made to seize the stone as much towards its centre as is possible. This is an affair of dexterity which practice and great tact alone can attain. It is of importance to remember that the female branch should be kept perfectly immovable while we are closing the instrument, otherwise we run the risk of displacing the stone, which generally lies against its ascending portion."

Further on the author remarks:—

"It is only in exceptional cases, and when the stone is both small and very friable, that we can expect to break it up at a single operation. The first sitting should also be short, about five or six minutes, and when the passage becomes accustomed to the instruments, or less irritable, the operation may be prolonged for ten minutes at a time. This is a rule from which M. Civiale never deviates, and his opinion in this matter deserves the greatest attention. From three to eight days should elapse between each operation, to allow the fragments to pass away with the urine, and any irritation which the operation may have excited to subside."

We fully agree in the latter sentiments. If for the perfect success of the operation a proper attention should be paid to

preparatory treatment, the final issue of the case mainly depends upon an observance of the precepts contained in the above quotation. We have learned from our own experience that many of the evil consequences of lithotrity result from an anxiety, upon the part of the operator, to abridge the tediousness of the case, by which he is tempted to leave too short an interval between each operation, and to prolong each sitting beyond the limits of prudence. If M. Civiale, whose success in lithotrity has been so extraordinary, "*never deviates*" from the rule above mentioned, it is censurable rashness in any one else to disregard the results of his experience, and to pursue an opposite course. The operation of lithotrity, it should be remembered even by its most ardent partisans, can never compete with lithotomy as a means of speedy, decisive, and permanent cure; its equality with, or superiority over, lithotomy rests altogether upon other grounds; it is the endeavour to effect by lithotrity what can never be done without risk, that has made it fail in so many instances, and has brought it into apparently deserved disrepute.

The fourth chapter gives an account of the after treatment and after symptoms of lithotrity, and the obstacles to the operation:—

"If we have any reason to suppose that the detritus of the first operation will not come away readily with the urine, we should at once proceed to promote their discharge. A full-sized metallic catheter, largely fissured on its sides near the beak, is to be passed into the bladder, and the fluid which had been injected during the operation is to be drawn off. A portion of the detritus will come away with this fluid. A few ounces of tepid water are now to be injected into the bladder, and then drawn off as before; and the injections may be repeated three or four times, until the patient complains of fatigue, or the fluid which escapes from the bladder ceases to contain any detritus."

We are aware that it is the usual custom after the operation to introduce a catheter, and to wash out the bladder, but we doubt much if it be a wise method to adopt. The introduction of so large a catheter, and particularly the repeated injection of the bladder, cannot fail to greatly increase the irritation which follows the operation, and greatly add to the patient's sufferings. If the calculus is very friable, and has been much broken up, it is advisable to introduce the catheter, and draw off the water that had been injected, and with it some of the detritus; but in many instances even this will not be required; we prefer, therefore, in general to allow the patient to expel the detritus without any artificial assistance. It

is only the very small fragments which can be removed by the catheter; and unless a very large quantity of the calculus be reduced at the one sitting, it is not likely that the neck of the bladder or the urethra will be blocked up with the detritus. We have never resorted to the method of washing out the bladder; and in some instances we have not even introduced the catheter, but have allowed the patient to empty the bladder himself after the operation, and we have never met with any unpleasant consequence therefrom; on the contrary, we have thought that the subsequent irritation was much less from not adopting the usual course. The accident, too, which Mr. Coulson mentions as likely to occur—the impaction of a fragment in the eye of the catheter—is another objection to the same procedure. The author certainly would appear to approve of the method only conditionally, for he says—"If we have reason to suppose that the detritus will not come away readily with the urine:" but how are we to know beforehand in what case it will come away readily, and in what this is not to be expected?

The obstacles to the operation of lithotrity are numerous, and are well worthy of particular attention by those who undertake it; they are all pointed out in the latter part of the chapter at present under notice.

"The obstacles to the ready performance of the operation naturally come first. What are these? On what do they mainly depend? We can anticipate many of them by simply reflecting on the nature of the operation, and the conditions necessary for its successful performance. Lithotrity, in fact, is made up of the introduction of instruments of a certain size and shape through the urethra into the bladder; of the seizing in that organ bodies of various sizes; and lastly, of working the instruments in such a manner as to break up the foreign body, and allow of its discharge through the urethra. Hence everything becomes an obstacle which impedes the introduction of the instrument, its seizing the stone, its working in the bladder. Let us follow these three divisions in their order."

The accidents of lithotrity occupy the fifth and sixth chapters. Mr. Coulson enters largely into this subject, and gives much valuable information upon it. He divides the accidents into the "real" and the "presumed," thus drawing a very important distinction between the accidents which are the natural consequence of the operation, and those which are in no way necessarily connected with it. We would direct especial attention to both these chapters.

But by far the most important practical point as regards lithotrity, consists in the indications and contra-indications of

the operation; and in order to render these the more clear, Mr. Coulson devotes the entire of the seventh chapter to a consideration of the "pathological effects of urinary calculi, the various effects produced by vesical calculi upon the urethra, prostate gland, bladder," &c., &c.

It is perfectly obvious that unless a proper selection of cases for lithotrity be made, uniform success cannot be attained. The surgeon, who is anxious to be a successful operator, takes care in all other instances to discard all cases which he thinks unsuited to operation;—and why should there be any exception to the same wise course in lithotrity? But there is no doubt that lithotrity is performed in the most indiscriminate manner, without the least regard to the particular circumstances of the case. The lithotomist, eager to maintain untarnished the reputation he has acquired, takes care to weigh well beforehand the chances of success in each case he undertakes; whereas the lithotritist too often takes no trouble about the selection or rejection of cases, as if success was a thing of certainty in all instances. If, however, we are to succeed with lithotrity fully and satisfactorily, we must as carefully examine into the fitness or unfitness of cases for it, as we should in lithotomy, or any other operation. Mr. Coulson says:—

"The fact is, that most surgeons perform lithotomy sufficiently well, yet when they come to lithotrity, judgment and skill seem to have abandoned them. The dexterous lithotomist suddenly becomes a very indifferent lithotritist. An eminent hospital surgeon, who cut eighteen patients without losing one, could never perform lithotrity in a respectable manner."

This is certainly strange, nevertheless we believe it to be true. It is the natural tendency of the human mind that, when it becomes wedded to any particular thing, it embraces an innovation with great reluctance; the result is, that when the latter comes to be adopted, it is imperfectly accomplished, whatever it be. We observe this in many instances. The lithotomist, having practised the operation of lithotomy for years, having his hand "made up" (as the phrase is) to a particular manœuvre, and having won laurels by his skill, will naturally resort to lithotrity with reluctance and prejudice, and cannot be expected to acquire that degree of dexterity he exhibited in his favourite operation. He performs the operation clumsily, and it may be carelessly,—he is conscious of this, he sees that no *eclat* can be gained by it,—he, therefore, condemns the whole proceeding, and returns with renewed energy to advocate the operation by which he acquired his celebrity. It is not sur-

prising that a surgeon thus prejudiced, and performing the operation, should be extremely careless in the selection of the cases and all other circumstances necessary for success; but even the avowed supporters and favourers of lithotrity seldom pay sufficient attention to its indications and contra-indications. Our author enters minutely into the many contra-indications to lithotrity which are met with, showing the special manner in which each proves unfavourable; some rendering the operation physically impossible, others interfering with its easy performance,—some affecting its safety, others leading to fatal results.

The most important point connected with this part of the subject is, in our mind, the question as to how far renal disease is to be viewed as a contra-indication to lithotrity. There is much difference of opinion upon this head; Mr. Coulson says:—

"If we are to select lithotrity, it should, in my opinion, be only when the renal disease is not very far advanced, and where the condition of the bladder and nature of the calculus lead us to conclude that the operation may be completed within a short period."

We are inclined to go further than this, for we think that unless the organic disease of the kidneys has gone to a considerable extent, the operation is not altogether contra-indicated. Any renal complication renders the case unfavourable for lithotrity, but unless the disease is aggravated it does not forbid it. Under such circumstances, however, we resort to the operation, not with a view of effecting a permanent cure, but rather of giving temporary relief instead of abandoning the sufferer to the tortures of the calculus. And if no other contra-indication exists, if all other circumstances are favourable, we do not see how the operation can aggravate the renal complaint to any considerable extent, provided it be done carefully, gently, and with prudence.

So much for what we have termed the first part of Mr. Coulson's work.

2. *Lithotomy.*—The author divides this subject in the same systematic manner that he does lithotrity: first, the history of it; second, the description of the lateral operation; third, the obstacles, and fourth, the accidents of lithotomy; and discusses each in an equally clear and concise manner.

In describing the lateral operation he says:—

"I have had some—I may say, without presumption, a large—experience in lithotomy, and the result of my experience is, that the incision through the prostate should be free enough to allow of

the extraction of the stone without much violence, yet not too free, for fear of hemorrhage or infiltration of urine into the extra-aponeurotic cellular tissue. I am therefore an advocate for moderate incisions, followed by gentle dilatation during the extraction of the calculus."

Further he says:—

"A moderate incision, according to my meaning, is one which does not pass through the whole depth of the prostate, but leaves a few lines of that body, near its base, and the capsule, undivided."

We fully agree in considering it of great advantage to make the incision through the prostate sufficiently large for the extraction of the stone; but we would even go beyond the limit laid down by Mr. Coulson, and we think a free incision, provided it does not go into, or too much into the neck of the bladder, will rarely be productive of mischief. The question, of course, is one of degree, but we think we have seen as much, if not more, mischief done by adopting the opposite extreme, and not making the incision sufficiently free and proportionate to the size of the calculus to be removed. Experience has ratified what reflection might suggest, and much of the evils of lithotomy arise from repeated efforts at seizing the stone in the bladder, and from difficulty in extracting it. Those operations are, *cæteris paribus*, the most successful in which the patient is kept a short time upon the table, and in which the stone is easily caught and readily extracted. Some operators, in their timidity not to make the incision too large, actually do no more than nick the prostate gland, the consequence being that, when the forceps are introduced, the blades cannot be sufficiently divaricated; and if roughness be employed, the parts will be lacerated, which, with prolonged ineffectual poking the bladder, does an incalculable amount of injury.

From want of space we are reluctantly compelled to pass over, without special notice, the author's observations upon the obstacles to lithotomy, its accidents, and the causes of death arising from it; but we are anxious to direct the attention, particularly of the junior practitioner, to these most important points, and which will be found so systematically detailed in the volume before us.

3. *Parallel between Lithotrity and Lithotomy.*—This part of the work describes the advantages and disadvantages of each operation, where the one is superior to the other, the two being placed in contrast. Much of this may be drawn inferentially from what has gone before; the circumstances under which lithotomy is preferable to lithotrity

may, in a great measure, be learned from a consideration of the contra-indications of the latter operation. Where lithotrity is inadmissible, lithotomy can, in many instances, be adopted with perfect safety, and *vice versâ*. Still the great importance of the subject demands special attention; accordingly our author institutes a comparison between the two operations in the fullest manner, showing the objections to each individually, and those that are common to both. The manner in which this is done may be gathered from the following:—

"And here, at the commencement, I would observe that I do not propose comparing lithotomy and lithotrity in the abstract. I shall not attempt to determine whether lithotomy should exclude lithotrity, or *vice versâ;* whether the former be the general rule, and the latter only its exception."

The parallel is first drawn between lithotomy and lithotrity, as operative proceedings. He says:—

"To sum up, then, what has been said, and draw a parallel between the two methods considered merely as operative proceedings, I would conclude that in two out of the three parts into which each operation may be divided, lithotrity is superior to lithotomy.

"In the means of arriving at the bladder for ease, simplicity, and safety, the latter cannot bear a comparison with the former.

"For seizing the stone, lithotrity affords greater facilities.

"For the third step, which consists in its extraction, lithotomy is much superior to lithotrity."

In the next place the two operations are compared as to the accidents to which they give rise, and the cases to which they are respectively applicable:—

"In determining the propriety of applying lithotrity to any case, two main points are to be considered—viz., the nature of the calculus, and the condition of the urinary organs."

The author winds up this part of his volume with the following general conclusion:—

"I would therefore, in general terms, conclude that all calculous patients under the age of twenty-one should be cut; and that all adults, except those unfit for the operation, should be submitted to lithotrity."

Every candid person who has had experience in both operations will admit the truth of this conclusion. Lithotomy in the adult is not to be judged of as that in the child; the two cases differ materially, not only in the mere operative proceeding, but in the consequences of the operation. In the

child, lithotomy is simple and easy of performance, and the ratio of recoveries, as proved by statistics, is very considerable; whereas, in the adult, the operation is complicated and difficult, and the recoveries, compared with the deaths, exhibit a sad preponderance of the latter. In order to complete the parallel between lithotomy and lithotrity, Mr. Coulson devotes the last chapter of this useful volume to the statistics of the two operations, thus furnishing the best and truest means of arriving at their comparative merits and demerits.

Our review of Mr. Coulson's valuable work now terminates, and we know not which to admire most, the careful manner in which it has been put together, or the clear, concise, and candid mode in which each subject is dealt with; and we think we cannot give greater weight to the opinion already expressed than by warmly recommending it to all anxious to gain sound information upon two of the most important practical parts of surgery.

On the Pathology and Treatment of Hysteria. By R. B. Carter, M.R.C.S.E. London: Churchill. 1853. Royal 12mo, pp. 161.

In the Preface to his book Mr. Carter informs the profession that his object is to publish the views of the late Mr. Mackenzie, "who was extensively known by his successful treatment of the most inveterate hysterical disorders," and to whom the opinions advanced, respecting the primary and tertiary paroxysms, as well as treatment, are referred, the author reserving to himself the responsibility of the other parts of the work.

In the first chapter, proceeding to describe what he considers the true characteristics of hysteria, Mr. Carter inveighs against the practice of including under the title of hysterical affections a large number of symptoms referable to disease of the medulla spinalis or its membranes, to hypochondriasis, or to simple malingering, and at the same time expresses his hope that an attempt to rescue the disease from inexactness unparalleled in scientific phraseology will find favour in the eyes of his brethren. There is certainly nothing more desirable in medical writing than the employment of terms which admit of little doubt as to their signification, since in the technicalities with which many works abound the junior student more particularly finds unusual difficulties, and is thus too frequently discouraged from acquiring valuable information. It is equally

important to those more advanced, that in the recording medical experience disease be clearly defined, in order that all doubt should be removed from the minds of readers as to the particular affection treated of; and this is more immediately requisite in the description of nervous disorders, where, from the apparent identity of symptoms, affections differing "a priori" are likely to be confounded.

Premising that by hysteria it is intended to describe a disease which commences with a convulsive paroxysm of the kind commonly called hysterical, Mr. Carter enters on the consideration of the phases of its development in its simple, complicated, and tertiary forms; and maintains the necessity of the primary convulsion being considered as the one essential characteristic, the "fons et origo mali," all other phenomena manifested being non-essential and secondary. To prove this hypothesis, an inquiry is instituted into that mental state so often associated with the affection, when the question is propounded of the relation which exists between emotions and physical change.

In examining the psychical and physical action of emotions, attention is directed to the powerful influence which they exercise on both mind and body: the nature of emotions themselves is also investigated, when we find the author's views, which are most clearly expressed, to coincide with those entertained by Cullen, who has already particularized the nature of volitional emotions as opposed to those which may be considered as involuntary.

The author denies altogether the existence of an hysteric diathesis; on this point his views differ very materially from those of many eminent authorities; more especially we may mention Dr. Roberton[a], who observes, "we have reason to believe, that there is absolutely an hysteric constitution, or congenital predisposition to hysteria, as that there is a scrofulous constitution or congenital predisposition to scrofula; and, consequently, that none are liable to hysteria but only such as possess this constitution;" while Dr. Todd[b] in a recent able lecture states, "Hysteria, no doubt, occurs chiefly in persons who have a peculiar character of nervous system." For our own part, while we seek not to deny the possibility of instances occurring confirmatory of Mr. Carter's opinions, we may observe that in by far the greater majority of instances of this disease which experience suggests, the convulsive paroxysm appears

[a] Physiology and Diseases of Women and on Midwifery, p. 237.
[b] Clinical Lectures, Medical Times, January 1st, 1853.

to have been but the last link in a chain of phenomena which we have had little hesitation in pronouncing as hysterical.

Following the steps of the earlier writers (though we are aware that some of more modern date have, in a measure, adopted similar views), Mr. Carter attaches special importance to the sexual passion as being that which most predisposes to this disease. An attempt is made to institute an analogy between man and the brute creation:—it is presumed that among the latter, as each kind of feeling is invariably followed by its special and proper consequence, while no particular results ensue; such not being necessarily the case with women, chastity is a state of violence to nature, especially if the desires have been awakened, and the natural action of the inclinations being opposed becomes diverted into other channels, among the results of which he would include hysteria. "The sexual passion," he writes, "is more concerned than any other simple emotion, and perhaps as much as all others put together, in the production of the hysteric paroxysm."

We confess we were disappointed with these extreme opinions, and are little prepared to acquiesce in their justice, seeing that the impressions which they are calculated to convey, more particularly to the non-professional reader, are at variance with the experience of those who, without a theory to support, take a just and sufficiently comprehensive view of an affection whose diversity of symptoms, and uncertain pathology, together with the class of patients in which it is chiefly manifested, render it as deeply interesting a study as is presented in the whole range of medical inquiry. The connexion is as evident as unexplained between the organs of generation and the mind; we seek not for a moment to question the influence they reciprocally exercise in common with those other powerful sympathies which too frequently eventuate in such strange manifestations of disordered action as baffle the best physiologists to account for, and the most skilful practitioner to cure; at the same time, we can conceive no more fatal mistake than that mentioned by the able writer[a] from whom we have already quoted, "the common error of regarding one or more symptoms ordinarily present in a disease as essentially characteristic, and indicating its nature and origin."

Mr. Mackenzie, whose views as the basis of the present work we are thus canvassing, recognises in his opinions the "hysterica libidinosa" of some writers, and doubtless has been led to adopt them from his observation amongst patients of a

[a] Roberton.

particular class. We question much if they will meet generally with that approval which the care Mr. Carter has bestowed in recording them would merit. Doctrines almost similar, when advanced by M. Louyer Villermay, have been ably refuted by M. Georget, and rejected "as false in their principle, and immoral in their application;" whether they are identical with those entertained by the author, we are not in a position to say, as in the Preface to which we have alluded silence is preserved on this point.

In reference to the division of hysteria which is proposed, we quote from the author:—

"The word primary being reserved to express the paroxysms produced by some original and fresh emotion, to the action of which the system has not before been subjected, I propose to distinguish as secondary the attacks following the suggested or spontaneous remembrance of the emotions to which the primary fit has been due; and to call those tertiary that are designedly excited by the patient herself through the instrumentality of voluntary recollection, and with perfect knowledge of her own power to produce them."

This division into what we must consider as stages of the same disease, may, when feasible, be found of use as enabling the progress of the affection to be estimated; though practically speaking it is not, at all times, an easy matter to establish the differential diagnosis of each. The remarks on this point will be found of value, as also those useful hints for the efficient treatment of hysteria as it occurs in work-houses and large institutions, of whose efficacy, from observation, we do not entertain a doubt.

Under the head of "Moral state and motives," are supported the doctrines previously advanced, when the influence of the erotic passion is again advocated as producing more especially the secondary paroxysm; while the subjects of tertiary hysteria are divided into two classes; "The first comprises women whose sexual propensities have been disappointed, but whose lot in life may be in all respects desirable; and the second, those in whom some form of envy or discontent is the predominant feeling." However we may differ from the author on this point, we agree in his subsequent remarks, that it is "a trial for a plain girl who accompanies her pretty sisters to a ball, and spends her evening in seeing them dance, and the next day or two, in hearing them describe and discuss their various partners!" yet we should hope that such exciting causes of this affection are rare, except in those whose minds being badly regulated, require but slight incentives to

passion. In defence of the plain girls, as well as society, we may observe, occurrences of this nature are, as far as our observation extends, by no means frequent.

The remainder of this chapter is chiefly devoted to proving the assumed character of the hysteric paroxysm, and the morbid craving for sympathy which is present. It is, without doubt, a curious problem to solve,—what that moral state is which causes a patient to forego all rational enjoyment, and subject herself to treatment frequently of the most painful, and generally by no means of a pleasurable nature. Mr. Carter, like many who have written on this subject, has been satisfied with recording the fact, offering such an explanation as may be inferred from his preceding observations.

The fourth chapter is devoted to the consideration of the most important features of this Protean disease, or its complications, in which the author displays practical knowledge of the principles which regulate their development, and offers many valuable hints for their recognition; the hysterical affections of the uterus and ovaria in their moral as well as physical manifestations being fully appreciated, while in his allusions to the use and abuse of the speculum, the opinion of all enlightened professional men is truly re-echoed. The hypotheses of previous writers as to the pathology of this disease are ably reviewed, and the various doctrines which have at times been set forward classified and investigated: when the conclusion is arrived at, more from negative than other grounds, that the essential nature of the affection has not been satisfactorily expressed. In his inferences the author manifests such a desire for truth as will, we trust, lead him to modify those extreme views which, on the broad principles of medical philosophy, are to be considered as objectionable.

In the chapter devoted to the treatment, the general principles laid down accord with those which experience suggests; differing, however, as we do from the author on many important points, more especially as regards the physiology of the disease, we cannot acknowledge such principles of treatment as we conceive those particular views rather than observation have suggested; for instance, when speaking of the employment of combined moral and medicinal remedies, he adds:—

"But unless the patient is ready and willing to lend her own assistance, or unless the feeling aroused be of a very transient nature, none of these means will secure a very great success; and in cases where a secondary paroxysm has been produced by sexual feeling, most parents would do well to permit what they consider a 'mésalliance,' rather than to risk the chances of recovery."

Proceeding further we read:—

"The professional man must always make every communication, which either expresses or implies his view of the case, a matter of confidential and private conversation, and he must never allow the smallest hint of it to escape in the presence of the patient and other persons, in order that he may always have it in his power to use the threat of exposure, and to suggest to her how differently her family would look upon her, if they only knew what he could tell them; and not only should he observe this precaution, but he should also make a point of treating his patient with marked courtesy in the presence of strangers, in order that she may feel herself to be actually receiving all the respect and politeness due to the most exemplary of her sex, and that she may know herself to be so treated only upon the sufferance of her medical attendant."

In speaking of doubtful cases we find the following remarks:—

"Whatever decision the medical attendant may arrive at, he should judge and act entirely upon his own responsibility, because, to call in the aid of another opinion, however valuable it might be with reference to the particular question, would show, beyond a doubt, that he was really perplexed about the case."

With these quotations we conclude our notice; we cannot acquiesce in their sentiments, and altogether doubt their efficacy, believing hysteria to be essentially a nervous affection, capable of being induced by a great variety of causes, associated of necessity with no special lesion, though usually manifested by disturbance in the functions of one or more of the great nervous centres; and considering the many excellent works and papers on this subject with which the current medical literature abounds, as well as the deserved and high reputation of those authors, some of whom we have quoted, and to whose opinions those of Mr. Carter are directly opposed,—we have deemed it advisable in so important a matter to speak our sentiments through them, rather than give expression to our own opinion. The importance of the subject, rather than the extent of the volume, has led us thus far; and we shall only add, that as regards the views of Mr. Mackenzie, we have no doubt Mr. Carter's own observation will so modify them, that should his work be again presented to the profession, —the full responsibility devolving on himself,—the ability displayed in the present publication will insure a more valuable addition to the information we now possess on so important a disease.

Stricture of the Urethra; its Complications and Effects; with Practical Observations on its Causes, Symptoms, and Treatment; and on a safe and efficient Mode of Treating its more intractable Forms. By Robert Wade, F. R. C. S., &c. London: Churchill. 1853. 8vo, pp. 360.

In our ninth volume[a] we noticed the second edition of a former work, by the same author, on the "Curative Powers of Potassa Fusa in Strictures of the Urethra." In the Preface to the present publication Mr. Wade declares that:—

"The following pages are the result of a desire to produce a comprehensive treatise on stricture of the urethra, comprising its various complications and effects, and whilst I have introduced into this volume some of the more practical observations, including cases which appeared in my former publication on the subject, the utility of the work has been enhanced by quotations from writings of the most eminent authors on this class of diseases."

Encouraged by the tone of the Preface, we took up Mr. Wade's book with the expectation of finding in it a really comprehensive and practical work on strictures of the urethra,—a book, in fact, suited to both student and practitioner; but, after a careful perusal of its pages, we can only look on it as Mr. Wade's former work in another garb, for we find that more than one hundred pages of the book before us are devoted to Mr. Wade's favourite mode of treating certain forms of strictures of the urethra by potassa fusa, whilst many of the practical subjects connected with urethral obstructions have not been dealt with in that full and comprehensive manner which they are justly entitled to,—more especially in a volume aspiring to the character of a complete treatise on strictures of the urethra, and their various complications.

As the chief feature, then, of Mr. Wade's present publication consists in a reiteration of his continued reliance on the use of potassa fusa in certain forms of strictures of the urethra, and as we have already placed before the profession both Mr. Wade's views on the subject, and the powerful objections which experience, in other hands, has raised against the caustic method of treatment in this affection,—we deem it unnecessary to revert to them now again.

[a] Page 101.

The Dietetics of the Soul. By Ernest Von Feuchtersleben, M. D. London: Churchill. 1852. Foolscap 8vo, pp. 202.

A Commentary of Medical and Moral Life; or, Mind and the Emotions, considered in relation to Health, Disease, and Religion. By William Cooke, M. D., M. R. C. S. London: Churchill. 1852. Royal 12mo, pp. 304.

The inquiry into the nature and functions of the human mind is not confined to a solitary class of investigators,—the metaphysician, the jurist, the divine, and the physiologist, all claim their right to travel through this intellectual domain, and attempt to divide off portions for their respective uses. Some of its regions constitute a kind of commonage, or neutral ground, where all can meet; others are debateable land, the confines of which are yet unsettled; while far in the distance extends that *terra incognita*, vast and trackless, as yet untrodden by the philosopher, but containing mines of hidden wealth to repay future discovery.

The desire to widen the circle of human attainments, and to exchange incertitude for knowledge, is essential to the constitution of the mind, and every attempt in this direction merits attention. The physiologist and practical physician while contemplating the wondrous phenomena of animal organization interpret, as best as they can, the connexion it holds with mind. The former, regarding the nervous system as the chief basis of discovery, the "medius terminus" of the syllogism, explores its structure by every art which chemistry, histology, and experiment can suggest; the latter looks abroad on life as affected by disease, examines patiently each aberration from the ordinary track, to mark if it could suggest a guide to some way yet unfound. Thus the fancies of the hypochondriac, the dreams of the somnambulist, the delirium of fever, and the delusions of insanity, have all been skilfully analyzed for a clue to the mysterious union between matter and mind.

With two of these works on mental analysis we present our readers: one of them, entitled, "The Dietetics of the Soul"—"Zur Diætetik der Seele," by the Baron Ernst Von Feuchtersleben, Vice-Director of Medical Studies at Vienna, originally published in 1838, and so favourably received in Germany that it has passed through seven editions. The other publication is by Dr. W. Cooke, already before the medical public as the editor of Morgagni on the Seats and Causes of Diseases, and seemingly intended by him as a kind of comple-

ment to that work, in elucidating the mental, moral, and corporeal nature of man.

To the author of the first of these works, as a stranger, we feel bound in courtesy to accord precedence, and the more especially as he is no youthful aspirant in the field of medical literature, but of considerable reputation in Vienna. He is known in these countries for his work on Psychology, a translation of which, by Dr. Babington, of London, was published for the Sydenham Society in 1847. The title which he has chosen for his work, and which the English editor endeavours to justify, namely, "The Dietetics of the Soul," jars a little strangely on our ears, and we certainly give a preference to the term used by Dr. Babington, who translates it, "The Dietetics of the Mind." To our notions the culture of the "*soul*" appears the province of religion, and it has become so identified with man, viewed as a moral and responsible agent, that to use it out of that sense is likely in this country to create confusion. We are accustomed to look for the aliment which supplies the hunger and thirst of the soul, its cravings after happiness, its consolations under affliction, in religion, where alone it can be found.

The author, understanding by the "soul" that immaterial, imperishable essence which includes our intellectual and moral being, states that he has written his little work as a *fragmentary* contribution to ethics, and it partakes very much of that character. His object is to communicate "a knowledge of those means by which the soul is preserved in a state of health," and this state he conceives to be attainable, and capable of being formed into an art. By due culture such a degree of control may be obtained, he conceives, by the mind over the bodily organs, that the access of disease may be kept away; and he cites the rather *outrè* observation of an eminent authoress, that "persons can only become healthy by feeling the greatest disgust at illness, and placing implicit reliance on the axiom that health is most lovely and loveable." That this power of self-control is possible not only over a morbid state of the feelings, but over actual physical causes of disease, is a position he tries to support by an appeal to experience, and gives instances of various means which draw off the mind from dwelling on these morbid influences. Of these he mentions amusement and travelling,—"men seldom die upon a journey, or during their honeymoon." Duty and occupation are still more powerful means of diverting the mind from brooding over its sorrows. "Every physician can testify from his own experience that no-

thing but the conscientious fulfilment of his duties has on many occasions been able to dispel the cloud which obscured his social and bodily existence. Nay, he has felt that this very activity protected him from the dangers connected with the prosecution of his profession." A man of strong mind, by a powerful act of volition, has succeeded in effecting this same object. "I was unavoidably exposed," says Goëthe, "to the contagion of putrid fever, and I warded off the disease by a simple act of the will. The power of moral volition in such cases is incredible. It seems to pervade the whole body, and communicate a degree of energy which enables us to overcome all injurious influences. Fear is a state of weakness, during which we are easily conquered by an enemy." In Goëthe the power of volition was the more marked, as the absence of professional duty was wanting. Most medical men can recollect similar instances, and, on the other hand, of diseases produced by sudden fright, where the imagination yielded itself up a ready victim to the attack.

Besides the power of *resistance* to external influences which he believes that the spirit of man can acquire, he goes a step farther, and claims for it a power of active subjugation. He seems to fear to give his own ideas on this subject, but adopts, as expressive of them, a quotation which savours strongly of the cloudy mysticism for which the Germans are remarkable: —"May we not suppose that the mind, which is an excessively penetrating agent, exerts a certain influence on the external world, and has the power of impregnating the earth, wherever its manifestations are intensely active." In illustration of this theory it is asserted, that when we come within the reach of a good man the air and earth are made healthy, while proximity to a bad man becomes deadly, "causing the virtuous to shudder, and the weak to incline towards evil when they approach the spot." The place where a murder has been committed always smells of blood. That this feeling of aversion towards the scene of some terrible crime is commonly entertained is a matter of fact, but that it arises from physical influence hovering over the spot, and acting upon our corporeal and mental natures, appears the veriest superstition. Man regards the crime of murder with instinctive abhorrence, and whatever brings it forcibly before his thoughts, as the scene where it was committed must necessarily do, will always be repelled with dislike. Could we substantiate the theory, that by some undescribed *aura* the good man impresses those about him, and not by the force of his example, what a clue it would afford us through the devious labyrinth of life. Within the magic circle of his

influence, like that of the enchanter, no evil demon could penetrate, and we would have but to come within the physical area of goodness to be kept unharmed by sin. How we are besides to distinguish the truly good man,—the person who, like Cato, "maluit esse quam videri bonus,"—from the simulator, he does not say, but he suggests that a faculty of moral diagnosis is not impossible to be attained, as Dr. Haine, of Berlin, reached such an acme of physical penetration, that "he could distinguish the various eruptions of the skin by their odour alone"!

In the chapter headed, "Beauty the reflection of health," there are some observations well worthy of attention. It was a favourite notion of the celebrated Lavater that a visible harmony existed between moral and corporeal beauty, and moral and corporeal ugliness. It is not, however, to be understood that this refers to mere personal charms, which are evanescent with time, as, if so, it could not be borne out, for Socrates was well known for the *simious* expression of his countenance, and that monster of moral turpitude, Nero, was remarkable for personal attractions. True human beauty is "that all-penetrating spirit, unstained by the irrevocable influence of the passions." The body is the engine of which our passions are the springs. The human features which indicate beauty, or its opposite, in an individual, soon take their shape from those habits of feeling and willing which constitute character, from the often repeated movements of the voluntary muscles. "Every oft-repeated motion of the countenance, the smile or the tear, the writhing of pain, the sneer of mockery, the scowl of anger, each leaves behind it a track in which it works again and again, until a permanent mark is established in the muscles and cellular tissue of the face, and after a time in the more solid structures, perhaps even in the form of the skull itself." The faces of passionate men are more deeply wrinkled when they arrive at old age than the countenances of tranquil persons; the violent gestures in the former have left traces of their existence in the contraction of the skin. There is thus a difference in the aspect of old age; beauty remains to the "hoary head when found in the way of righteousness," so that "there is a bloom even in wrinkles,"—while the worn and haggard expression of old age, stained by guilt, or debased by passion, repels us with abhorrence. And the slow and almost invisible influence of nature in thus stamping the mind upon the face requires the marked consideration of parents, as it is commenced almost from birth. Harmony of expression thus shows a healthy state of body and soul, the true beauty, that of the spirit, rendering glorious its

earthly tabernacle. This is sometimes disturbed by pain, but in several of our painless diseases, as sometimes occurs in consumption, the face remains beautiful to the last.

The effects of imagination on health and disease forms one of the most interesting chapters of the book. "Imagination is that faculty which unites the material to the spiritual world, —a wondrous principle,—we scarcely know whether appertaining most to the soul or to the body, whether it rules us, or we rule it. It is peculiarly suited to act as the mediating agent between mind and body." This faculty is the source of both our pleasures and our pains; it gives their charm to our day visions and our night dreams, giving to "airy nothings a local habitation and a name." It is in this faculty "that most diseases of the mind have their origin." "How profound are the sufferings of those unhappy persons who allow their imaginations to become fixed upon some disease which threatens them, or from which they imagine they already suffer. Sooner or later it is sure to attack them." There are few medical men who have not met with examples of these injurious self-tormentors, and even the profession itself is not free from instances of it. Boerhaave's pupil is well known, who, during the course of lectures of his illustrious teacher, graduated through every phase of disease that was drawn before his mind, till his health began at length to give way. It has occurred to ourselves, after delivering to a class a lecture on disease of the heart, to be called upon to treat some visionary palpitation in a pupil, while imaginary consumption haunts many a young stethoscopist with terrors more formidable than the real malady. During the cholera an animated description of the symptoms generally gave rise to uncomfortable sensations in the abdomen, and in some, to the veritable disease. The startling accounts in newspapers were in general found so injurious in increasing the evil by alarming the public, that in many places the authorities suppressed the bulletins of daily deaths, so as to keep the public mind from injuring itself.

The author dwells at length on the well-known but important fact, that imagination acts as a curative agent as well as a destructive, and enlarges on the importance of educating and directing it aright. He gives some humorous instances of this, and the reader will readily call to mind similar cases. Dr. Macleod, of London, used to remark that some of his patients with imaginary ailments, whom he treated with bread pills, complained of the severity of their effect. Much of the influence of animal magnetism is explained by Dr. Holland in his interesting "Notes," as the force of imagination, and the

cures of homœopathy are produced by similar influences. The charlatan often effects the cure of a morbid feeling, by requiring absolute and unconditional obedience and faith from his patient. Every physician should endeavour by all honourable and rational means to secure the confidence of his patients; and none but they who have felt the soothing influence of a calm and self-possessed countenance, and the hopeful language of their physician, can tell the total change of feeling it effects when the mind is agitated by extreme apprehension.

We can only afford a few remarks more on the chapter on "Oscillation." Life, he observes, is made up of contrasts. In nature, the calm succeeds the storm; spring follows the sleep of winter. So in human existence, joy comes after sorrow, "like the alternate inspiration and expiration of the vital air." This succession of action and rest is true in both our ordinary and extraordinary habits. "He who crowds the labour of two days into one must pay the penalty by an extra day's inactivity," for Nature will not be hurried out of her course. Literary and professional men would do well to mark the truth of this axiom, as they often, by straining the bow too intently, destroy the elasticity of the string. This law of contrast pervades human existence; and the higher the excitement the deeper will be the subsequent depression—

> "Violent delights have violent ends,
> And in their triumph die, like fire and powder,
> Which, as they kiss, consume."

If pleasures were unmixed with regrets, it would be too much for our natures. Perpetual spring is the dream of the poet,—his "ver æternum" belongs to an imaginary land. And we are not without a degree of pleasure in thinking of our sorrows and trials,—like Shakespeare's honest Dogberry, each of us likes to speak of himself as one "that had his losses." Indeed, such is the strange inconsistency of the heart, that we look back on past pain often with more satisfaction than past pleasure. We must acknowledge the truth of that delicate alleviation of present sorrow used by the poet: "forsan et hæc meminisse juvabit." The struggle which has put our manhood to the trial is that we respect the most, as the general estimates that victory most which has cost him the greatest sacrifice.

We have thus attempted to give an account of the aim and the execution of this little work. It is not written to produce effect, but "has been conceived in the spirit of repose for self-cure and meditation." It would, however, be going too far to say that it is free from defect. Trite observations occasionally

are made to appear original, by being clothed in a harlequin dress; and some observations are so profound as to need an interpreter to explain their hidden meaning. It abounds, on the other hand, with striking thoughts, eminently suggestive. This code of dietetics for the treatment of mental diseases comprehends among its therapeutics the habits of self-knowledge and of general philanthropy, the love and study of nature, the importance of healthy occupation of body and mind, and the keeping ever before the mind the fulfilment of our duty. If it does not enter much into the province of religion, it seems at least free from the infidel theories which poison the productions of some of the most refined German philosophers.

We have been led so far in our remarks upon the preceding work, that we have but little space for an analysis of Dr. Cooke's volume on "Mind and the Emotions," and it is less necessary, as kindred subjects are treated of by both writers. The author appears a man of a benevolent and religious disposition; and in reading his pages it cannot escape us how, without trenching on the duties of the minister of religion, the physician may, in a moral and religious point of view, be eminently useful, and when he may administer consolation without stepping beyond the limits of his office. Yet we agree with that eminent and truly devout physician, the late Dr. Cheyne, of Dublin, that it should be done cautiously, as when the medical attendant speaks of preparation for a future state, it is generally understood by the patient as sounding the death-knell, and the faint hope of recovery which yet lingered in his heart becomes at once and for ever extinguished. The part of Dr. Cooke's work we like the least is his sketch of the anatomy of the human frame; it is too general for the medical student, while for the public it possesses little to recommend it, especially when we have such a beautiful model of what such popular sketches ought to be in the writings of Paley. The author has collected together a large fund of interesting matter on the passions and emotions as influencing and influenced by the body, and has enlivened his detail by numerous anecdotes of various interest collected from his own experience and that of others. While he does not reach the philosophic elevation of his German collaborateur, his work does not want practical sense, and will afford many valuable hints to the reader on subjects of which no one should be ignorant.

Histoire des Apothicaires chez les Principaux Peuples du Monde, depuis les temps les plus reculés jusqu' à nos jours, suivie du Tableau de l' État Actuel de la Pharmacie en Europe, en Asie, en Afrique, et en Amérique. Par A. Philippe, Docteur en Médecine, Chirurgien en Chef de l' Hôtel Dieu, &c., &c. Paris: A la Direction de Publicité Médicale. 1853. 8vo, pp. 452.

We were not a little surprised in taking up a volume, with the pretensions set forth in the above title, to find our existence almost completely ignored, and that while Sweden and Norway, united under one crown, and whose joint population but little exceeds two-thirds of that of Ireland, reduced as the latter has recently been by famine, pestilence, and emigration, have each their separate and distinct portion of the work, extending over several pages, assigned to them, the Emerald Isle is merely incidentally alluded to in three lines, under the head of "Angleterre." It is, no doubt, but too true that pharmacy, as a science, has been but little studied in this country, and we probably may not have sufficiently forced ourselves on the attention of the author, as discoverers in a field which has been so much enriched by the labours of his own countrymen; still, a writer professing, as M. Philippe in his Preface does, to have "collected the scattered fragments which, heretofore buried in isolated pages, or in a crowd of scientific collections, constituted all that was written of the history of apothecaries, resembling, in a word, a vast mutilated body, whose widely separated limbs lay here and there upon the soil; and to have made of them as compact a pile as possible, essaying, by an operation which has not been unattended with difficulties, to give them form and life;" should not have passed over in total silence the effort made some years since to sketch in the pages of this Journal the origin and progress of pharmacy in Ireland[a].

Should M. Philippe, however, plead ignorance of the existence of the paper we have just alluded to, we must observe, first, that it was his duty to have informed himself of all that had been published on the subject concerning which he was about to write; and secondly, that he is indebted for this ignorance to the system of medical plagiarism too prevalent in the present day; for M. Dorvault, in the "Revue Pharmaceutique de 1849," a work which is quoted by M. Philippe,

[a] See an Outline of the History of Pharmacy in Ireland, by William D. Moore, M. B., in vol. vi. of our present Series, p. 64.

presents his readers with an article entitled "Coup d' œil sur l'État de la Pharmacie dans les Temps Anciens," which is neither more nor less than a literal translation of eight or nine pages of the introductory portion of Dr. Moore's paper, and which, having been published by M. Dorvault without acknowledgment of the source from which it was derived, was reviewed as an original essay of his in the number of the "Journal de Médecine et de Chirurgie Pratiques" for March, 1850.

Having taken this, under the circumstances, necessary step of making our presence in the world known, we shall proceed, we can assure M. Philippe, to notice his work in as good a spirit as we should have done had he not ignored our existence. We shall, however, take it for granted that should his volume, as we hope it may, reach a second edition, he will assign us a niche in his historic temple.

The unbridled love of change, observes the author in his opening chapter, excited by the French Revolution of 1789, extended to the apothecary, and led him to reject the designation he had inherited from his ancestors in favour of the not less Grecian, but, in his opinion, less plebeian denomination of "pharmacien." We may observe, that in Britain also the title is likely soon to become extinct, the name "apothecary" being there in process of merging into that of general practitioner, while the preparation and composition of medicines are falling into the hands of the "pharmaceutical chemist." Having assigned some reasons for the preference given to the title of "pharmacien," the author observes, that "the educated man, who conscientiously practises his art, does not trouble himself to think whether he be called apothecary or pharmacien;" that "to obtain the respect which the profession procures when it is followed with talent and probity, is the sole object of his ambition."

In the three following chapters the origin and development of pharmacy are traced with great care and erudition, and its history is brought down from the earliest ages to the period of the appearance of apothecaries in France. In a notice like the present we can, of course, do little more than briefly touch upon the more salient points of this highly interesting portion of the work, referring our readers to the volume itself, in which they will find a rich variety of instructive lore, culled from the writings of a large number of ancient writers, both sacred and profane:—

"It is," observes the author, "universally admitted that the first seeds of pharmacy commenced to germinate under the genial

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influence of the Eastern sun, in countries fertile in perfumes, sweet-scented plants, and fragrant resins; nor is there any doubt that the inhabitants of these favoured climes bequeathed to their posterity prescriptions by the aid of which they were enabled both to relieve pain and to allay the raging hallucinations of delirium; and that consequently they are entitled to be considered the fathers of the science.

"The only work, however, left by these people, which has braved the ravages of time, is one whose author was Chin-nong, Emperor of China. This monarch was, according to Cadet de Gassicourt, contemporary with Manès, first King of Egypt, but, according to Henri and Guibourt, he flourished six centuries before him. However this may be, Chin-nong died 2699 years before the birth of Christ, leaving an herbal which bears his name, and contains a detailed historic nomenclature of all the plants of the Celestial Empire."

But it is in Egypt that we must chiefly seek the dawn of pharmaceutic science. Isis is said to have discovered the salutary application of many drugs, and King Osmyndias placed over the entrance to the library of his immense and splendid palace of Thebes the words, "Pharmacy of the Soul," an expression evidently borrowed from pharmaceutic science, and metaphorically applied to the treasures contained in that rich collection for the relief of moral maladies.

Pliny, Clement of Alexandria, and Galen, mention several medicines as having been known to the Egyptians. Finally, the existence among them of the art of embalming proves that the properties of resins and essences were perfectly known to them.

Among the Jews, the Egyptians, the Babylonians, the Persians, the Macedonians, and the Greeks, as well as in the Esculapian Schools at Cos, Smyrna, and Alexandria, medicine, surgery, and pharmacy, formed but one profession; the same individual was physician, surgeon, and apothecary. Physicians were not the only class who practised pharmacy; patriarchs, prophets, princes, and kings themselves were skilled in it. In Persia, Cambyses prepared ointments and traded in them with the King of Egypt. "Alexander the Great also, King of the Macedonians," as Justin in his twelfth book relates, "was a great apothecary, and, by means of an herb he had discovered, cured Ptolemy, who had been dangerously wounded, and with the same herb he cured all who had been wounded in battle." Antiochus Philometer; Nicomedes, King of Bithynia; Attalus Philometer, King of Pergamos; and Mithridates Eupator, King of Pontus, were also versed in botany and pharmacy.

The author enumerates several writers on pharmacy whose

works perished in the destruction of the Alexandrian Library; describes the Empiric and Dogmatic Schools; and briefly gives the history of some female apothecaries, as Medea; Agnodice, the beautiful Athenian,—who disguised herself as a man in order to attend the lectures of Herophilus, and being accused by the physicians, who were jealous of her success, of introducing herself to women's houses in order to seduce them, proved her sex and so came off triumphant, and obtained for herself, and other ladies of that seat of civilization and learning, permission to practice medicine and pharmacy; Aspasia, who gave public lectures on botany; Artemisia, Queen of Caria, 380 years before Christ, who studied the secret virtues of plants and drugs, and gave her name to the *Artemisia vulgaris;* finally, the dazzling and magnificent Cleopatra, Queen of Egypt, to whom a work entitled, *De Medicamine Faciei*, has been attributed.

The author next proceeds to Rome, which had closed its gates against physicians during the first five or six centuries of its existence, and was equally for so long unprovided with apothecaries. After the establishment, in the capital of the world, of freedmen as physician apothecaries, so many accidents arose from their ignorance and negligence, that Sylla promulgated a law punishing these two crimes with deportation and death. A re-action took place, however, under Augustus, who, during a great famine, drove all the inhabitants from Rome with the exception of the physician-apothecaries, on whom he subsequently conferred the right of wearing the ring of gold, and raised a brazen statue to Antonius Musa his physician.

The apothecaries of Rome had numerous competitors in the *medicæ*, who devoted themselves to the treatment of female diseases, and the *sagæ* (the word *sage-femme* is derived from this), who composed and sold ointments, philters, and abortive potions. Not content with practising their execrable art, these women received a large revenue by the constant commission of the crime of infanticide.

We shall not follow the author through the "Greek and Arabic periods" which occupy his fourth chapter,—much of this portion of the history has already appeared in the pages of this Journal,—but shall pass to the appearance of apothecaries in France, where no notice of them is met with until the thirteenth century.

Pharmacy had now fallen from its high estate. No longer cultivated by kings and princes, its votaries, the apothecaries, were placed in France in the same rank as the grocers, druggists, and herbalists, and with them formed part of the corpo-

ration of grocers, which was the last of the four trades designated under the names of drapers, goldsmiths, furriers, and hosiers; but a little later the corporation of grocer-apothecaries attained the second rank, and was governed by six masters or wardens, who, like the judges and consuls of municipal towns, wore a robe of black cloth, bordered with velvet of the same colour, with cape and pendant sleeves. By a charter granted in 1312 by Philip le Bel, and confirmed in 1321 by Charles IV., they were styled *le commun des officiers marchands d'avoir des poids*[a]. This style was given them because the standard of the weights and measures of Paris was deposited in their custody. They had the right of inspecting the weights of all the other merchants, but were obliged to verify their own every six years by comparing them with the originals preserved under four keys at the mint, the making of which was attributed to Charlemagne. A banner and arms were granted to them, having a golden balance, with the motto, "Lances et pondera servant."

The grocers owed the importance they enjoyed in the middle ages to their selling drugs, spices, and sweetmeats, brought at a great expense from the East; the greatest mark of honour which could be paid to a guest was to offer him wine and spices.

When Louis XI., in 1467, being threatened with ruin in France by Edward of England, was obliged to form suddenly a civic guard, the corporation of apothecary-grocers was placed at the head of this militia, and ranged under the richest of the sixty-one banners set up by the trades of Paris.

In 1408, Prevot de Tours published his Pharmacopœia, the materials of which were borrowed from Mesué and Nicolas.

M. Philippe quotes several royal ordinances, from which it appears, that before the end of the fifteenth century a rigid examination of drugs had been established; the apothecaries had been subjected to the superintendence of the physicians, in order to secure the due observance of their prescriptions; visits of inspection had subsequently been organized for this pur-

[a] One would naturally suppose that the frequent occurrence of the above phrase in the charters and ordinances of the French kings led to the designation of the common system of weights by the term "Avoirdupois," now in common use. It is stated, however, in the Penny Cyclopedia, that *averdupois* is the more ancient mode of spelling the word, and that the obsolete French verb *averer*, and the middle Latin word *averare*, signify "to verify," and that it is more likely that we are to look here for the true etymology. It has also been supposed that the word is derived from averiā ponderis, *averia* and *avera* being words used for goods in general.—*Penny Cyclopædia*, Art. AVOIRDUPOIS.

pose; the duration of apprenticeship had been fixed at four years; and the rules of admission had been settled.

The author devotes his sixth and seventh chapters to the history of the discovery of the syringe, and its results. Though we admit the value, "d' un coup de piston donné à propos," we are not inclined to join the author in comparing the importance of Signor Gatenaria's invention to that of the discoveries which have handed down the names of Gutenberg and Columbus, and we shall therefore pass over this portion of the volume, quoting only the statement, that at the commencement of the reign of Louis XIV., "les clystères furent tout à fait à la mode," that the "bienfaisant et modeste operateur" returned each morning carrying with him on an average the sum of six crowns, the proceeds of his matutinal visits—"C' était," adds M. Philippe, "le siecle d' or de l' apothicaire. *Quantum mutatus ab illo.*" At length, however, hurt by the railleries of Molière and the sneers of the public, and yielding to the evil suggestions of vanity, the apothecary suffered the instrument of his fortune to fall into the hands of the nursetender.

In 1514 Louis XII. separated the apothecary-grocers from the pure grocers. By a decree of the Parliament of Dijon, in 1599, wills made in favour of apothecaries were null. In 1595 apothecaries were forbidden by the Parliament of Paris to give medicine without the prescription of a physician.

The apothecary had a priority of claim before all the other creditors of a deceased insolvent for the medicines furnished during the last illness and of those which had preceded it, and his debt in other cases even took precedence of the widow's settlements.

The art of pharmacy felt the impulse given to letters by Francis I., and in consequence the number of pharmacopœias, dispensatories, and lexicons, suddenly increased, in an immense proportion, during the sixteenth century,

Military pharmacy, unknown to the ancients, commenced feebly among the Arabs, but did not reach any considerable development until long after the discovery of the New World. Fostered by several of the successive monarchs of France, it gradually gained a high degree of perfection, and the glory it acquired, during the wars of the Revolution, and of the Empire, is universally known. Finally, by virtue of a royal ordinance, in 1816, the equality of physicians, surgeons, and pharmaciens, was formally recognised; they had the same rights and prerogatives, and none could lay claim to any especial precedence.

By an ordinance of Louis XIII., dated 1638, an examina-

tion in the Latin Grammar was made a necessary preliminary to entrance on apprenticeship to an apothecary.

St. Nicholas was chosen as patron of the apothecaries, because the products they employ come by sea, under the guidance of pilots, of whom, likewise, Saint Nicholas is the patron.

The ninth chapter of M. Philippe's work concludes with a list of the pharmacopœias published in various parts of Europe, during the seventeenth century. The first Codex Parisiensis was published in 1639.

During 146 years there were constant quarrels between the physicians and the apothecaries. Their animosity was so great that the former attempted to reduce the latter to starvation by making their patients purchase their remedies from the grocers and the herbalists, and the apothecaries were obliged to yield to the demands of the physicians; among other things they submitted to inspection twice a year, by four doctors in medicine of the faculty of Paris; consented that the examination of candidates should take place in presence of deputies from the faculty, who were forced to prevent other than pharmaceutical questions being put; and became liable to penalties if they gave any medicine to patients without the prescription and advice of a physician of the faculty, or if they compounded the prescriptions of an empiric.

Besides the corporation, the "Royal Apothecaries" formed a body possessed of enormous privileges, which are detailed at the close of the tenth chapter.

In addition to the differences with the physicians, the apothecaries had long and serious disputes with the grocers, which were only terminated by the establishment, in 1777, of the College of Pharmacy, and the dissolution of the incongruous union between the two bodies.

Candidates for admission as apothecaries, having attained the age of twenty-five years, were obliged to furnish the College with an extract from the baptismal register, as well as with certificates of moral character, of sufficient knowledge of the Latin tongue, and of having studied under masters in pharmacy for eight years, of which at least four should be spent in Paris.

The examinations were held at furthest at intervals of a month;—the first was on the principles of the pharmaceutic art, and the application of these principles to operations; the second, on plants and simple drugs derived from the three kingdoms, and on the history, choice, nomenclature, preservation, &c., of the same; the third was to be practical, and was to last

three days, during which the candidate was obliged to perform publicly, without assistance, at least nine operations, according to the Codex. It was necessary that he should obtain, at each examination, the approval of two-thirds of the examiners before he could be admitted as master.

The College was obliged to open every year, for the instruction of the pupils, public and gratuitous courses of chemistry, pharmacy, botany, and natural history.

The formal installation of the College took place on the 30th of June, 1777.

The College of Pharmacy was the only learned body which passed unscathed through the Revolution; it remained erect in the midst of ruins; and while the country was rent by factions, and the monuments of genius were overturned, the pharmaciens of Paris assembled peaceably for scientific discussion.

It was, however, subsequently suppressed, and between it and the creation of the Schools of Pharmacy a Society was founded, and existed for some years under the name of "Société libre de Pharmacie de Paris," which reckoned among its members the most distinguished chemists of France,—Fourcroy, Vauquelin, Pia, Deyeux, Bayen, Parmentier, Baumè, Chaptal, Guyton de Morveau, &c. One or two prize questions were annually proposed by this Society, either for the improvement of analysis, or to excite to researches on products of which little was known, or for the amelioration of pharmaceutic processes. It was with this Society that the well-known "Journal de Pharmacie" originated.

Finally, the law of the 21st Germinal of the year XI., which created the present existing Schools of Pharmacy at Paris, Montpellier, and Strasburg, was promulgated. We have already extended this notice to such a length that we cannot follow the author through the history of these institutions given in his thirteenth and fourteenth chapters, neither can we enter on the consideration of his highly interesting essays on sacred pharmacy and on the pharmaco-poets; nor the instructive chapters on the history and present state of pharmacy in China, Persia, Turkey, Greece, Egypt, Russia, Sweden, Norway, Denmark, Germany, Austria, Prussia, the Netherlands, America, England, Spain, Italy, and the Kingdom of the two Sicilies;—for these and many valuable details contained in the portion of the work of which we have given a necessarily imperfect sketch, we must refer to the work itself, where a vast amount of information on these important topics is presented in a readable and agreeable shape. M. Philippe's volume is printed in a large, clear type, and on paper superior to that of the majority of continental publications.

We shall conclude our review with one or two remarks on the author's sketch of the state of pharmacy in England.

M. Philippe states, that of ten thousand individuals who vend medicines in the three United Kingdoms, three-fourths at least are unqualified persons, who only carry on business through the careless tolerance of the Government. Though there is probably considerable exaggeration in this statement, there is no doubt that the composition and sale of medicines by ignorant and unqualified persons prevails in these countries to a great extent, whether through the apathy of the bodies appointed to preside over pharmacy, or through defects in the laws they are bound to administer; but we agree with the author in thinking that a subject so intimately connected with the public health demands the special attention and surveillance of the Government.

Another subject which justly meets the reprobation of the author is the system of barefaced advertising so extensively carried on in England, and the sale of secret remedies by haberdashers, hardwaremen, and jewellers. "If I were asked," says M. Philippe, "in what country pharmaceutic charlatanism is most common, most impudent, and most lucrative, I would answer, without fear of contradiction, that it is in England, and in London in particular."

Lastly, he refers to the want of chemical science among the practical pharmaciens of Great Britain. On this score we must plead guilty; science is too jealous to yield her laurels to a divided attention, and it is not to be expected that those who combine the pursuits of pharmacy and chemistry with the distractions of general practice shall shine as lights in her paths. It is, as we before observed, a lamentable fact that pharmacy, as a science, has been too much neglected in these countries, and but a very small minority, even of the few among us who have laboured to advance it have belonged to the ranks of pharmaciens proper. We trust, however, that a better state of things is opening upon us,—the proceedings of the Pharmaceutical Society in England, the formation of a Museum of Materia Medica and pharmaceutical and chemical preparations now in progress at the King and Queen's College of Physicians of Ireland, and the institution of annual prizes for purely scientific questions in chemistry and pharmacy by our own Apothecaries' Hall, show that attention is being awakened to our defects, and that efforts are being made which may yet render the School of Dublin not less distinguished in the domain of pharmacy than it already is in that of practical medicine and surgery.

Observations on Syphilis, and on Inoculation as the Means of Diagnosis in Ulcers and Discharges invading the Genital Organs; comprising also a Brief Outline of the Ancient and Modern Treatment of Syphilis, and pointing to New Views and to a New Method of treating that Disease. By JOHN CROWCH CHRISTOPHERS, M. R. C. S. London: Churchill. 1853. 8vo, pp. 74.

IN perusing a treatise on any particular class of diseases, the question naturally arises, as to the author's antecedents, from what sources has he derived the information which he purports to impart to his readers; upon what foundation are his premises based; what the opportunities which have been afforded him for investigation; all of which considerations must materially affect the value of deductions made, and more especially of aphorisms, which at the present day are too often dogmatically propounded. And if these observations hold good as regards the elucidation of disease in general, how much more closely will they apply when we reduce them to specialties, which for their clear and accurate demonstration demand an extensive and varied field of research. In our last Number we brought under the notice of the profession two works on syphilitic diseases, which had just issued from the press, the one from the pen of Vidal (de Cassis), the distinguished colleague of Ricord at the Hôpital du Midi; the other from that of Dr. Egan, whose observations were based upon an experience of nearly five years, during which period he was officially connected with our Lock Hospital; upon both of these volumes, for reasons previously stated, we felt bound to speak in terms of the highest commendation.

The materials for Mr. Christophers' book have been gleaned from a more circumscribed sphere, and in this particular differ, we believe, from every other treatise on the subject; on that point, however, we shall allow the author to answer for himself:—

"I have been in the habit," says he, "for some years past of experimenting by inoculation, of noting cases, and of recording observations on the divers modes of treatment employed by myself and others in syphilitic disease. Moreover, I have attended to a point which I consider has been greatly neglected, and to this neglect a vast deal of error and discrepancy is due. I have been at the pains to keep a considerable number of cases under observation for years after their treatment, and as far as this amount of experience warrants, my mind is made up to certain principles, and to a plan of treatment at variance with doctrines hitherto propounded."

Far be it from us to find fault with a practitioner for instituting a careful analysis of the cases which present themselves to his notice in his private practice. We have ourselves derived much profit and advantage from a steadfast adherence to this rule, and we unhesitatingly recommend it to every one engaged in the treatment of disease; but when on these detached and isolated notes, as a basis, a superstructure is attempted to be raised, and sweeping deductions generalized from particular instances, we at once condemn the practice as mischievous, and well calculated to lead to false and erroneous conclusions. Further, when we are informed that "certain principles" have been arrived at, and a novel plan of treatment has been devised from the system of keeping close watch on *private* patients for years after their treatment, we confess we become somewhat sceptical as to the soundness of the doctrines which this "principle" would inculcate. And in truth it requires no force of reasoning to substantiate the oft-told tale, that patients, when released from medical surveillance, having once contracted habits of licentiousness, are prone to fall before temptation, and become again the victims of disease; nor in these cases of renewed infection does it follow that the same surgeon is consulted, or that these fresh indications of imprudence are presented to his notice. Moreover, secondary symptoms may succeed, and relapses ensue, of which the former attendant may be perfectly unaware, for our experience of this class of patients has taught us that they frequently travel from one surgeon to another, in expectation of a quicker and more efficacious cure.

Mr. Christophers, in common with many other writers, declines entering upon the history of these affections, deeming their origin at most a matter of conjecture; but it is at the same time evident that he inclines to the belief of those who refer their outbreak to the latter end of the fifteenth century. He is likewise of opinion that the disease, during late years, has undergone a considerable modification, which he correctly ascribes to the adoption of a more scientific and rational mode of treatment.

Upwards of six pages of large type are next occupied with copious extracts from Hunter's work, interspersed with the occasional comments of the author on the injurious effects which are likely to follow the indiscriminate employment of mercury, —remarks so trite, that we venture to assert they are familiar as "household words" to the veriest tyro in the healing art. The question as to the identity of gonorrhœa and chancre is now mooted, and Mr. Christophers, after having alluded to the ex-

periments instituted both by Hunter and Bell, agrees with the latter as to the non-identity of the two poisons. To the army surgeons, and to the celebrated pathologist, Broussais, is attributed the decided improvement which has taken place in the treatment of the disease; and although, much as we are indebted to the disinterested and indefatigable labours of the medical officers of the British Army, and to the strenuous exertions of our continental brethren, we must here remind the author that, as regards priority, the honour which he accords to others is due to our own countryman, the late Mr. Carmichael, whose name, we regret to find, is not once mentioned in connexion with this part of the subject. Such an omission we conceive the more inexcusable, as reference is made to individuals of whose existence we have hitherto been unconscious. Mr. Christophers coincides with the accuracy of the conclusions arrived at by the adoption of the simple treatment, viz., that every form of ulceration on the organs of generation is curable without the aid of mercury, but states that, when this course is exclusively pursued, the process of convalescence is more protracted than when a mercurial treatment is resorted to. He likewise affirms, what every practical surgeon must have observed, that where primary ulcers assume a chronic condition, a reparative action is not unfrequently set up by slight mercurialization; this salutary effect we hold is explicable on the general principles of surgery, apart from any specific character in the sore itself.

The comparative rarity or frequency of secondary symptoms, under the mercurial or non-mercurial plan of treatment, next engages the attention of the author, and here two propositions are dogmatically laid down, and conclusions arrived at from the "practice of inoculating every case" that presented itself to Mr. Christophers among his private patients:—

"Through this means I found that no one case tested by inoculation, and proved thereby to be syphilitic, whether treated by mercury or otherwise, escaped secondary symptoms, under a more or less severe form, by which I imply that secondary symptoms in some shape are the inevitable consequence of a genuine chancre[a], be the treatment what it may." And again:—"The converse position also holds good, that in no instance, the inoculation failing, have secondary symptoms supervened; therefore, let the treatment be mercurial, or let it be simple, if the case be one of genuine chancre, secondary

[a] In speaking of syphilitic ulcers, Mr. Christophers attempts no classification beyond limiting the term "genuine chancre" to sores which are reproduced by inoculation.

symptoms, in some shape, will as surely follow, as that the sore will be reproduced by inoculating with the virus it secretes."

Now we need scarcely add, that from both these conclusions we altogether dissent, and we cannot but think that if the operations adverted to were performed on a more extensive scale, inferences such as the foregoing would never have been deduced. We have frequently observed the positive result produced by inoculation without the subsequent supervention of secondary symptoms, and more commonly still have we witnessed the occurrence of consecutive disease where inoculation had failed in proving the specific nature of the sore. On these points our views entirely harmonize with those of Mr. Parker when he states—"That certain ulcers, the result of sexual intercourse, and not distinguishable by their external characters from other ulcers equally the result of sexual intercourse, yield a characteristic pustule by inoculation; but the ulcers which do not yield the characteristic pustule are equally liable to be followed by secondary symptoms." And with a more recent writer when he says—"The superficial, non-indurated, primary ulcer is sometimes inoculable, at other times not. Each description of sores is occasionally followed by mild constitutional symptoms"[a]. It will likewise be observed, when Mr. Christophers affirms that secondary symptoms equally result on a venereal ulcer, whether treated with mercury or not, he runs counter to the authorities of Rose, Guthrie, Bacot, and others, who have proved from extensive statistical induction that constitutional symptoms of a mild form are of much more frequent occurrence in individuals where mercury had not been employed in the treatment of the primary affection, than where a contrary line of practice had been originally resorted to. Following closely the author, we arrive at four assertions, which are made in the form of propositions as the result of his observations:—

"1st. The severity of secondary symptoms I have invariably seen to be in a ratio with the duration of the primary disease; the longer that exists, the more surely and effectually it impresses the constitution. 2ndly. The duration, not the number of primary sores, influences the severity of secondary symptoms. 3rdly. The duration, not the severity, of the primary sore or sores, influences the severity of secondary symptoms. 4thly. The difference in the appearance of the primary sores, and the difference of appearance assumed by the secondary affection, is influenced by constitutional

[a] Egan on Syphilitic Diseases. London: 1853.

idiosyncrasy, habits, and treatment, and not by virus of different character."

Here, again, we must join issue with the author on his first proposition; and while we are free to admit, what he himself further on acknowledges, that in destroying the primary ulcer as soon as possible after its formation, the chances of consecutive disease are very much lessened, at the same time it does not by any means follow that, *because* the primary sores remain unhealed, *therefore* the secondary symptoms should put on a formidable aspect. Now, we most positively assert, and in doing so we are borne out by an extensive experience, that if the primary, superficial, non-indurated ulcer were to continue uncicatrized for months or years, if possible, the absorption of the virus would never produce rupia, nodes, and that loathsome form of sloughing at the back of the pharynx which we so frequently observe as the consequence of the primary phagedenic ulcer. Nor would the same description of sore, no matter how long its standing, give rise to the true scaly eruption, or the excavated ulcer in the tonsils,—constitutional affections which are well known to succeed to the indurated ulcer, properly so called. But, apart from these considerations, we do not believe that absorption from syphilitic ulcers proceeds *ad infinitum;* there are certain limits to this process, as surely as there are certain stages where a poisonous sore ceases to generate infectious matter. In stating, in his second proposition, that secondary symptoms bear no relation to the number of primary sores, our opinion perfectly coincides with that of the author. From his third proposition, however, we must again dissent, as we know in cases of phagedenic ulceration the most formidable species of primary sore, when constitutional symptoms supervene—which fortunately, in consequence of the rapid destruction of parts, is of comparatively rare occurrence —they almost invariably bear a direct ratio as regards severity to the primary affection. To the last proposition we shall not now address ourselves, as we shall have occasion to return to it when examining into the authenticity of the proofs adduced in its favour in a subsequent part of the work. In alluding to the mercurial treatment of primary ulcers, the practice of excessive salivation is justly deprecated; and where this mineral is indicated, the author gives the preference to small doses of calomel, so as to produce a mild degree of ptyalism, which is to be followed up by the administration of the iodide of potassium.

Mr. Christophers goes on to state, that it never yet occurred

to him to witness a single case of tertiary symptoms following simple treatment. Now, while we admit that the most severe forms of periostitis are consequent upon the abuse of mercury, and that caries and exfoliation of the nasal bones are only encountered where the constitution is saturated and poisoned, as it were, with the mineral, we are equally clear that nodes result from the pure and uncomplicated absorption of the venereal poison.

From the 26th to the 39th page the author furnishes us with the details of cases in which inoculation had been practised as a diagnostic test, confirmatory of the experiments instituted by M. Ricord and others on an extensive scale. The arguments in favour of inoculation as a means of diagnosis are, in the main, identical with those adduced by the professor at the "Hôpital du Midi." There is, however, one deduction to which we must take an exception as being contrary to recognised authority:—"12th. That chancres cannot be produced by inoculation in the lower animals." Now we really did not think it possible that any author, undertaking to write on the subject of inoculation, could make the foregoing assertion, more especially as the experiments of M. Auzias-Turènne, by which it has been incontrovertibly proved that syphilis *can* be communicated to animals, are at present the subject of repeated discussion, and upon which the absurd and dangerous doctrine of prophylactic and curative syphilization was attempted to be engrafted. We very much fear that in this particular instance, as in some others which we might readily point out, the author has fallen into grievous errors, in consequence either of ignorance or contempt of established authorities. Moreover, although repeated allusion is made to the doctrines of Ricord, Mr. Christophers does not seem to be acquainted with the more recent opinions of that surgeon, embodied in his letters addressed to the editor of the *L' Union Médicale* in 1850–51, and of which we gave an analysis in our volume for last year.

The remarks on the administration of the iodide of potassium, and the doses in which it should be exhibited, are most judicious, as well as the succeeding observations and cases cited to prove the injurious effects of mercury in phagedenic or sloughing sores. The author constantly reiterates his belief in the unity of the syphilitic poison, which, he conceives, is modified by idiosyncrasy, mode of life, situation, treatment, &c., and finally states that his views are supported by the results of inoculation. As we have already noticed Mr. Christophers' book at more length than we had proposed, we cannot enter on

the discussion of that interesting and much-disputed question; nevertheless, we are bound to direct the attention of the author to the writings of Ricord, Acton, and Hamilton, by reference to which he will observe, that his alleged proofs are precisely the contrary of what he affirms, and are altogether at variance with the theory which he endeavours to support. The book is concluded with a few desultory remarks on the communicability of the disease from husband to wife, from parent to offspring, and from nurse to child; in the last-named instance this mode of infection is duly recognised.

We regret that we have not been able to speak of this *brochure* in terms of praise; it is possible that, on reading the title-page, we may have expected too much; and as the substance of the book is compiled from observations which appeared in the "Lancet" so far back as the years 1845, 1846, and 1847, we probably should not have been disappointed at non-allusion to more recent authorities. In addition, it is, however, in many places very faulty as regards composition, is quite destitute of order or arrangement of any kind, and abounds in repetition. Notwithstanding, we are still free to confess, that we have found some wheat among the chaff; and that the remarks on the subject of treatment, although to our minds containing nothing novel, are, nevertheless, sound and judicious.

On Near Sight, Aged Sight, Impaired Vision, and the Means of Assisting Sight. By William White Cooper, Fellow of the Royal College of Surgeons of England. Second Edition. London: Churchill. 1853. Fcap 8vo, pp. 320.

Though the affections treated of in this volume are pretty fully discussed in the various treatises on ophthalmic medicine, Mr. Cooper has taken some trouble to amplify the matter, and bring these several subjects into, at least, a more prominent position than is usually assigned them in such works. We can scarcely say that, in a scientific point of view, the treatise before us has added anything of material importance to what had been already known; but as it is written in a plain and somewhat popular style, it is calculated to instruct the non-professional reader, the aim probably of the author, as the illustrative cases are certainly drawn up so as to be adapted to the eye of the public.

The first subject discussed is "myopia, or near sight." Mr. Cooper treats of it under two heads: 1st. "When it arises from imperfection in the form, consistence, or relation

of some of the refractive media." 2nd. "When it arises from the loss of adjusting power." He then states, that—

"The most frequent cause of congenital myopia is too great convexity either of the cornea or of the crystalline lens, or of both. In many cases of aggravated myopia, I have satisfied myself that the cornea had too much curvature, and that the anterior chamber was preternaturally large. Myopia may be the result of too convex a crystalline lens, or of too great distance between the cornea and retina, arising from the mass of vitreous humour being greater than the other parts of the eye require."

We believe that any such congenital defect is exceedingly rare, and Mr. Cooper must have surely observed many eyes in which the convexity of the cornea seemed too great, and that the anterior chamber appeared "preternaturally large," without, however, any accompanying defect in vision. Again he says: "An undue density of any, or of all, the refractive media, though the figure of the eye be normal, may also occasion this affection." It *may* be so, and, doubtless, did any "undue density" exist, the refractive power of the eye would be altered; but we are not aware that any such abnormal alteration has been demonstrated as the cause of myopia. We believe that in almost every instance of short sight the defect arises after the eye comes to be severely tasked, in the earlier years of life, and not from any original formation, and that, if the overtaxing of its powers be not persisted in, the eye will soon recover its healthy action, provided that the defect has been observed before any material injury has resulted to its adjusting apparatus! Hence the cure is to be effected by abstaining from viewing near and minute objects, by strengthening the general system, and by exercising the eyes upon distant objects. On this point Mr. Cooper lays down excellent rules, and we quite concur in the practical bearing of his instructions.

The next chapter treats of presbyopia, or aged sight, which would be better named, we think, long or distant sight, in contradistinction to short or near sight, and especially as presbyopia is not always the result of advanced years, and is frequently observed in persons who have not nearly reached even the middle period of life. In this chapter Mr. Cooper, after fully explaining the causes of presbyopia, enters upon the best method of remedying the defect; when speaking of adopting glasses, he says:—

"Their use, however, should not be deferred; for, although it is a common notion that spectacles are injurious to the eyes (and no

doubt they are so, if those of an improper description be employed), yet, when the powers of the eye so begin to fail that we can neither read nor write for any length of time, without great discomfort, it is reasonable to conclude, that refraining from their use is more injurious than their adoption. We, therefore, who prize the most valuable gift of nature, should be less anxious as to what others may think of our age, than for the preservation of so valuable a possession.

"The term 'preservers,' applied as it has been to the lowest description of convex glasses alone, tends to convey the idea that if such glasses are used in time, they prevent any further changes in the eye. This is erroneous, and it is to be regretted that the lowest magnifying powers should have received that appellation, for all glasses are 'preservers' if well adapted to the wants of the eye; whereas by applying that term to those particular glasses alone, thousands are induced to use them before they really require them, which is productive of injurious consequences, inasmuch as by assisting the eye before it needs help, we encourage it to be indolent in its action."

We are satisfied that the opinion here offered is judicious, for we know that either deferring the use of glasses after the eyes have become in the least distant-sighted, or putting on any kind of spectacles with the view of preserving the sight of eyes still in the possession of normal mediopic vision is a most pernicious proceeding.

In speaking of the use of glasses for the aid of presbyopic sight, Mr. Cooper makes the following useful observations:—

"It cannot be too strongly urged upon any one about to use spectacles for the first time, that that power which will enable him to read without much exertion by candle-light is the only power suitable for him."

And in conclusion, he says:—

"Glasses should never be worn by young persons without advice, under the idea of 'strengthening their sight:' it is a very great, though common error.

"Elderly persons should have recourse to spectacles as soon as they find their eyes aching and distressed in the evening with ordinary work; for more harm will arise from struggling against this failing of nature, than from the moderate use of suitable glasses.

"Spectacles should never be used unnecessarily nor indiscriminately, nor should they be worn in the open air, unless their aid cannot be dispensed with. They should be wiped with wash-leather when dull, and if the glasses become scratched, they should be renewed. Lastly, if people value their eyesight, they will shun cheap and imperfect spectacles, and puffing opticians."

These remarks, though they contain nothing of novelty, were they generally known and appreciated by the public, would certainly be productive of beneficial results; the medical practitioner is, or should be, aware of the force of Mr. Cooper's observations; but the people at large are very ignorant on these matters, and are open to the deception of the "puffing opticians," and to the evils arising out of the errors of ordinary opticians, who frequently know very little about the proper application of spectacles.

With respect to "puffing opticians," it is clear that they succeed in cheating the public, in a great measure, through the certificates they possess from certain qualified medical practitioners, who, from some motives, probably the prospect of being ranked in an advertisement among the "eminent members of the profession," are induced to give testimonials to itinerant optical quacks; a step at once unprofessional, and injurious to the community, and which cannot be too severely censured.

The next subject treated of in the third chapter is, "Impaired vision from overwork." This is one of the most common affections to be found among the ill-fed, ill-clothed workers in mills and similar large establishments, where there is much artificial light used, where there is great heat, and usually a great disregard of the principles of ventilation; we know of no more distressing affection, arising, as it most frequently does, in persons, young persons, who are necessitated to maintain themselves by daily labour, and in circumstances most trying to health. Mr. Cooper has given a pretty fair delineation of the complaint in the various aspects that it assumes, and the treatment he advises is, in the main, judicious.

With respect to abstraction of blood in these cases, we have always found, where there was evidence of congestion of the tissues of the eye, that local depletion by leeches was of infinite service, though the patient was even of "low vitality and feeble powers;" but when this evidence was not present, of course any such depletion was not required. Rest, absolute rest, is the best restorative in all cases of asthenopia, but when circumstances do not admit of that, the individual case must be treated according to the symptoms present, yet, in every instance, we believe that tonics—especially the preparations of iron—are essential to the cure, even when local congestion is present. We have not much faith in blisters in these cases; we have found stimulating embrocations, or the application to the brows of an ointment containing veratria, to afford greater benefit. Mercury in minute doses, as recommended by Mr.

Cooper, is often very serviceable, when there is a tendency to structural change in the deep tissues of the eye, yet we believe that, as asthenopia is essentially a disease of anemia, iron is, beyond all other medicines, the best internal means to be employed in the treatment of the affection. The preparation we have found most useful is the solution of the ammonio-chloride, which we are in the habit of prescribing in full doses.

The fourth chapter, on "Achromatopsy, or the inability to distinguish colours," is of little value in a practical sense, though it relates some "phenomena connected with the subject," which will likely interest those who are curious in such matters!

The three concluding chapters are devoted to the consideration of "glasses," "eye protectors," and "artificial light." The directions regarding the choice and use of spectacles are plain and practical, and recommend themselves to the notice, both of the professional and general reader, to either of whom the hints contained are of essential value. On the subject of "eye protectors," we have little to say beyond entering our firm protest against the doctrine regarding the cure of squint, which the author introduces and endeavours to enforce. And we are certainly surprised to see such views put forth by the ophthalmic surgeon to a metropolitan hospital; for every practitioner of tolerable experience in affections of the eye should know that the only rapid, certain, and perfect cure of a squint, admitting of any such interference, is to be obtained by surgical operation. Indeed, we fear that Mr. Cooper has not turned his attention to this subject, and we base our belief on the following passage, which is to be found at pages 253 and 254 of his book:—

"We receive material assistance in forming an opinion as to the precise nature of a case of strabismus by closing the sound eye, the other remaining open. If the squint still continues, and if the eye be unable to follow the movement of a pencil-case passed slowly transversely before the eye, we may fairly conclude that there is contraction of one or more of the muscles, and the case is favourable for operation. But if the distorted eye becomes straight on the other being closed, and follows the pencil-case without difficulty, we may reasonably hope to overcome the distortion by judicious practice, without having recourse to operative proceedings."

Now we assert that the very opposite of the illustration given here would guide any surgeon who had experience in the treatment of squint. If on covering each eye successively, we found that either of them did not become straight, the other

being still covered, we would consider the case as anything but "favourable for operation," as we would fear that, in a case of internal squint, without any power of abduction, there was some want of power in the external rectus muscle, and the persistent squint arose more from a want of due antagonism to the internal rectus, than from any preternatural shortening of that muscle. We always wish to see the pupil of the squinting eye, when the other is covered, carried to the centre line of the orbit at least. In all such cases, where no obstacle to the operation, such as opacity of the cornea, tumours, or any mechanical impediment exists, we operate with a pretty certain belief of success; but in the cases where there is little or no abduction of the eye, we feel very doubtful indeed as to the result of an operation. Such are our views, founded on the examination of many hundreds of cases, and supported by the experience of practical surgeons; and we are perfectly satisfied that scarcely any case of squint, which is *permanent,* and of more than a few months' standing, can be cured by any such training as that recommended by our author, and, consequently, that such a proceeding is by no means "judicious practice."

We must now dismiss Mr. Cooper's book; we consider that the subjects of which it treats are very fairly discussed, and that the volume contains a considerable amount of information, although a good deal of the matter might have been, with advantage, left out,—we allude especially to a number of the cases. The volume, on the whole, is an average sample of a great portion of the medical works, the production of London practitioners, which issue, almost daily, from the press, the writers of which seem to imagine they are under some moral obligation to become authors. Whether they individually benefit by the conception we know not, but we are pretty well satisfied that the world does not, in all cases, reap any great advantage from their labours.

Cursory Remarks on Recruiting and Recruits. By Frederick Roberts, Staff Surgeon, Second Class. London: Parker, Furnival, and Co. 1852. Pamphlet, pp. 31.

Recruiting and Recruits are the subjects of our Author's essay, and subjects of such national importance, that we cannot, in noticing his pamphlet, but regret that the matter is not more fully considered.

Hitherto the horses of our cavalry and guns have been selected with a degree of care and caution not to be surpassed,

but our men, on the contrary, have been enlisted with too great laxity, and too little regard to moral and physical capacity. This fact seems to have arrested the notice of the author, who devotes the pages now before us to the consideration of the condition of our Army,—offering some general remarks upon the moral and physical conditions in recruits, the influence of local association in the success of recruiting and characters of recruits, the influence of a standard height on the physical capacities of recruits, the selection of men for cavalry, artillery, sappers, grenadiers, and light infantry, and the influence of age in recruits. These form the subject-matter of consideration. Our space will not permit us to do more than notice one or two of these points, and we shall select those included under the head of the moral and intellectual capacities, because on these our author does not seem to be altogether correctly informed. He says, at page 8: "Reading and writing are particularly desirable, but are not universally considered as essential in the requirements of a soldier." So far from this being the fact, the regulations of the Army now enjoin that every recruit shall attend his regimental school until dismissed drill; in infantry for *two hours*, and in cavalry for *one hour daily*, for a period, upon an average, of *six months* in the former, and *twelve months* in the latter; and consequently there is not now one man in a hundred who is not well qualified in these respects. Education, however, does not terminate here; for, although *compulsory* attendance ends when the soldier is dismissed drill, yet every inducement is held out to him to continue to avail himself of the advantages to be derived from the school; and to prove how fully this is appreciated by the troops themselves, it may be sufficient only to mention that, at the present moment, out of 700 men attending the garrison school of Dublin, no less than 550 are volunteers, who spend an hour and a half daily in acquiring a knowledge of arithmetic, grammar, history, geography, and fortification. We think, therefore, that the education of the soldier is full well regarded.

Next, as to the moral condition of the soldier,—Mr. Roberts says, at page 9, "that excessive crime prevails in the general mass of the army." Now, taking the word crime in its common acceptation, we dissent altogether from this remark. We believe the soldier to be infinitely a better man than the civilian of his own rank of life, that is to say, so far as regards the commission of felonious acts, or deeds which would become the subjects of trial at sessions or assize. Against mili-

tary law he commits many offences: desertion, drunkenness, breaking out of barracks, insubordination, sale or loss of his accoutrements, &c., breaches of discipline requiring correction, it is true, but offences which we would hardly designate by the harsh word crime.

Our author next draws parallels between the frequency of these offences in cavalry, infantry, and the line, and in some of his remarks is right, in others altogether wrong. On the whole, however, we are favourably impressed with Mr. Roberts' opinions upon recruiting and recruits, and feel that his intention in writing is good.

An Essay on the Action of Medicines in the System; or, "On the Mode in which Therapeutic Agents introduced into the Stomach produce their peculiar Effects on the Animal Economy." By Frederick William Headland, B. A., M. R. C. S. London: Churchill. 1852. 8vo, pp. 346.

This treatise was the prize essay to which the Medical Society of London awarded the Fothergillian Gold Medal for 1852.

The author, after the manner of other prize essayists, has endeavoured to answer the whole of the questions proposed, and, in common with them, has not succeeded so well as if the subject had been of his own choosing, and as if he lay under no obligation to answer any questions except those which he was able to answer. To this circumstance we must ascribe the acknowledged fact, that prize essays, even when undertaken by the best hands, have been almost universally failures. The desire to render that complete which is still imperfect, and to stamp with certainty and the form of proof what has hitherto been conjectural, are the temptations besetting the mind of every one who has sat down to compose a prize essay. No subject in the whole range of medical science is more replete with allurements of this description than the Materia Medica; and when we say that our author has been carried out of his depth, we place him in good company along with many of the greatest names in medicine—men whose labours in other departments have been substantial and durable, but who on this subject have gone out of their reckoning, and been submerged in the same abyss.

The following is his "classification of medicines which act after entering into the blood, according to their supposed modes of operation."

CLASS I. HÆMATICA.

DIV. I. RESTAURANTIA.

Ordo 1. Alimenta.
„ 2. Acida.
„ 3. Alkalia.
Ordo 4. Tonica.
„ 5. Chalybeata.
„ 6. Solventia.

DIV. II. CATALYTICA—(Producing the destruction or counteraction of certain morbid agencies (*καταλυω*).)

Ordo 1. Antiphlogistica.
„ 2. Antisyphilitica.
„ 3. Antiscrofulosa.
„ 4. Antiarthritica.
Ordo 5. Antiscorbutica.
„ 6. Antiperiodica.
„ 7. Anticonvulsiva.
„ 8. Antisquamosa.

CLASS II. NEUROTICA.

DIV. I. STIMULANTIA.

Ordo 1. Stimulantia generalia.
Ordo 2. Stimulantia specifica.

DIV. II. NARCOTICA.

Ordo 1. Inebriantia.
„ 2. Somnifera.
Ordo 3. Deliriantia.

DIV. III. SEDANTIA.

Ordo 1. Sedantia generalia.
Ordo 2. Sedantia specifica.

CLASS III. ASTRINGENTIA.

Ordo 1. Astringentia mineralia.
Ordo 2. Astringentia vegetabilia.

CLASS IV. ELIMINANTIA.

Ordo 1. Sialagoga.
„ 2. Expectorantia.
„ 3. Cathartica.
Ordo 4. Cholagoga.
„ 5. Diaphoretica.
„ 6. Diuretica.

To the above arrangement many objections may be urged, but not more than to every other arrangement of the Materia Medica. When Galen laid down his system of pathology, consisting of four classes of diseases, arising from a predominance of cold, heat, dryness, or moisture, he arranged a system of the Materia Medica exactly to correspond to it, and all his medicines were either hot, cold, moist, or dry. This was all precise, and the difficulties were confined to details respecting individual remedies, and the rank which they ought to hold in their respective classes, which was indicated by numbers. But in our present state of pathology, which is based on derangements of great complexity, some chemical, some mechanical, but the greater part dynamic, and involving all the various structures and organs of the living body, any such adaptation of remedies to diseases, without disturbing or con-

fusing each other, so as to form a strict and logical arrangement, is clearly an impossibility. It is as if one were to divide the British army into eight classes:—1. The cavalry; 2. The infantry; 3. The artillery; 4. The English; 5. The Irish; 6. The Scotch; 7. The men over size; and 8. The men under size. Besides this evil of conflicting divisions, the basis of every arrangement must be not only distinct—it must also rest on distinctions not liable to change, otherwise the system founded on it will be insecure and valueless. Linnæus, that great master of systematic arrangement, was so thoroughly convinced of the absolute necessity of this, that he placed all preceding botanists in two divisions: the first, those whose system was founded on the fructification, or some part of it; and the second, those who based their system on other and more variable parts of the plant, as the stem, the root, or the leaves. The first he called orthodox, the latter heterodox; and, in adopting this principle, he has been followed by all subsequent botanists. But where in any physiological arrangement of the Materia Medica can any such fixed and immutable boundaries be found? To go no further than the first of our author's divisions, the Restaurantia, we have in it the Alkalies; while in Dr. Fleming's arrangement, published in the pages of our Journal for November last, they are among the Atonics. As long as the authors of systems can find no better foundations than opinions in pathology, combined with another set of opinions on the action of remedies in connexion with pathology, they must be content with their proposed arrangements being placed among those things which are, in a twofold sense, matters of opinion, and nothing more. Classifications are convenient, and indeed necessary, to the author or teacher. He is thus enabled to tie together a number of subjects, and to assist the memory; but when they are made to assume any higher importance they may prove not only delusive, but mischievous to the practitioner who in any way relies on them.

Every medicine stands by itself. It may resemble some other, but has no further connexion with it, and the successful administration of it does not depend on the analogies which any one may have supposed to exist between it and others, but on our knowledge of its operations under the varied circumstances in which we have to appeal to its effects. This part of the Materia Medica (Pharmacology) is in fact the great desideratum for the practitioner, but is of immense extent, and beset with so many difficulties, that to learn the effect of any one article, even apparently insignificant, under all the circumstances to which it may be applied and combined, would require the

observation of years. We cannot but marvel that the Medical Society, which has the disposal of the Fothergillian Gold Medal, should have proposed it as a reward for an undertaking, which, if achieved according to the terms expressed by them, would place the author above Newton or Laplace, and for which the members, even if they were to coin their hearts and brains into ducats, could never find a suitable recompense.

Our author, in his attempt to solve this mighty problem, or rather series of problems, has made short work of a great portion of it, by maintaining the old notion of specific remedies, which he has embodied in his Catalytic division, prefixing an *anti* to the diseases on which they are presumed to act. Much may be said in favour of this on account of its facility and convenience, but our author is not content unless for "every why he has a wherefore," and has interspersed here and there a variety of explanations, some chemical, some mechanical, and some dynamic, which, being at best grounded only on probabilities more or less, and not proved, we altogether decline to discuss, remembering still enough of our logic to know that the inability or difficulty of proving the negative by no means proves the affirmative.

We quote, however, with great satisfaction, the following experiments by Mr. Headland which tend to overthrow the endosmotic theory of M. Poisseuille, according to which any ordinary saline purgative of greater specific gravity than serum (1·028) acts by causing the passage of this serum outwards into the intestine by exosmose, thus producing a watery evacuation. This, like many other theories, merely because no one has been at the labour of finding experimental proofs against it, has been accepted as a fact by several estimable authors. Thus it is that, in our haste for generalizing and theorizing, we are obliged to retrace our steps, but not until we have added another heap to the mountain of rubbish which overspreads every part of pharmacology. The following are our author's experiments:—

"EXP. 1.—A sufficient quantity of white sugar was dissolved in four ounces of water to raise its specific gravity to 1·028, that of the serum of the blood. Two drachms of sulphate of magnesia were dissolved in another ounce of water, so that the solution measured nine fluid drachms, and had a density of 1·060. This heavier solution was introduced into an open wide tube, closed completely below by a clean piece of bladder. It was introduced into a small vessel containing the solution of sugar, and arranged so that the height of the two liquids should correspond. After three days, the inner solution measured two drachms more, and the specific gravity had sunk to 1·050. The outer solution, after making up exactly the loss by evaporation, was found to have risen in density to 1·040.

On adding to each of the solutions a small quantity of phosphate of soda and carbonate of ammonia, a copious precipitate took place, indicating the presence of magnesia. Thus it appeared that the fluids passed both ways, some of the heavy solution of magnesia finding its way through to the lighter solution of sugar. The tendency of this process was evidently to an equalization of their densities, both by endosmose one way and by exosmose the other. Thus, apparently, would it be with a saline purgative, and with the serum of the blood.

"Exp. 2.—Three drachms of sulphate of magnesia (a very mild purgative dose) were dissolved in ten ounces of water, and thus administered to a healthy young man. It produced, after some time, slight purging, and some diuresis. The urine, when tested, contained only a very little more than the usual quantity of magnesia. The quantity in the dose was less than five per cent. of the solution, and thus, according to the endosmotic theory, should have produced no purging.

"Exp. 3.—Six drachms of the same salt were given in eighteen ounces of water to the same patient. After a few hours, it caused very copious and long-continued watery purging. The urine did not seem to be increased, and contained no excess of magnesia. It seemed, that in spite of the dilution, the quantity of the salt was so large, that it could not pass off by the kidneys, and so was eliminated from the blood by the bowels, in the same way as other purgative medicines.

"Exp. 4.—This trial was the reverse of the last. Two scruples of acetate of potash were dissolved in three drachms of water, and thus administered. The solution then contained about twenty per cent. of the salt. According to the endosmotic theory, it should have caused only slight purging, on account of its density. It did not do so, but produced diuresis. The dose was so small, that, after absorption, it was easily eliminated by the kidneys."

As confirmatory of these experiments we may add that, it having occurred to us that if this endosmotic theory was true with respect to the intestines, which have a compound structure, it might also apply to other parts, more especially if greater length of time could be allowed for its operation. Accordingly, in a case of ascites in a patient with very thin integuments, we kept a solution of salts of great density constantly over the abdomen, but there resulted neither diminution of the fluid from within or increase of that without.

We hope on some future occasion to find our author, instead of beating the air with generalities, applying himself to some definite subject; and whenever he shall bring his talents and energies to a focus on some one point of the Materia Medica, we see much in this work to lead us to anticipate his success.

PART III.

MEDICAL MISCELLANY.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

THIRTEENTH SESSION.—1852-53.

Malignant Tumour within the Cranium.—Dr. M'Dowell exhibited the brain of a man, of middle age, who, in August, 1849, had been admitted into the Richmond Hospital with a small tumour in the parotid region, which was removed by Dr. Mac Donnell. The wound soon healed, and the man continued well for six months, at the end of which period he began to suffer from occasional attacks of loss of power of the left arm and leg; they occurred once or twice a week, and lasted for several hours; he likewise suffered from violent attacks of headach, the pain being referred chiefly to the frontal region. About two years and eight months after the operation, he was admitted into the Hardwicke Hospital, labouring under fever of a low character, and died at the expiration of a fortnight, with suffocative catarrh.

Autopsy.—The original disease was found to have recurred in the parotid region, the surface of the gland being covered with a slight deposit of scirrhous structure; there was no malignant deposit in the chest or abdomen, but a tumour as large as a hen's egg was found resting on the upper surface of the right cerebral hemisphere, near the mesial line; it was covered by the dura mater, which was at one spot perforated by a small projecting portion of the tumour, and in this situation the parietal bone was also perforated. The tumour, which was nearly as firm as scirrhus, had by its pressure formed a cavity for itself in the brain, but there was no softening of the cerebral structure.—*December* 4, 1852.

Malignant Tumours in the Abdomen and Pelvis: Cyst in the Liver.—Dr. Mayne detailed the following case, and exhibited the recent specimens. A female, aged 32, married, and mother of three children, was admitted into the South Dublin Union, under Dr. Shannon, in

the middle of October last. She had enjoyed excellent health until the Christmas of 1851, when it began to decline, immediately after the birth of her last child, and continued to fail up to the time of her admission. She then presented the appearance of a person labouring under some malignant disease or profound organic lesion. She was very much emaciated; her countenance and skin were of a dingy yellow colour; she had no appetite, and her spirits were depressed. On examination a tumour was found in the left hypochondriac region, in the vicinity of the spleen; it was nodulated, elastic, and movable. The finger could be passed all round it, and it seemed to have a pedicle springing from somewhere near the spine. She had no pain, and almost no soreness in it, but experienced wandering pains, like those of colic, in the abdomen. There was another tumour in the right hypochondriac region, the surface of which was smooth; its lower margin could be felt hard and projecting, like an enlarged liver, extending nearly as far as the ilium on the right side. Owing to the total absence of the menstrual discharge, and the existence of a tumour in the position of the uterus, the woman was under the impression that she was pregnant, and could not be persuaded to the contrary. This tumour was about the size of a cricket-ball, and presented the form and size of the uterus at about the third or fourth month of utero-gestation; but it was clearly ascertained that she was not pregnant. She had constant bearing down, frequent micturition, and tenesmus. The neck of the uterus was healthy, as appeared on examination *per vaginam*, but a tumour was found above the uterus, blocking up the pelvis. The best diagnosis we could arrive at was, that the tumour in the left hypochondriac region was of an encephaloid description; that the liver was enlarged; and that some encephaloid growth would be found on it. The day before yesterday she was seized with great prostration of strength, fainted, and said she felt satisfied she was dying. She experienced severe pain, which she referred to the right portion of the diaphragm.

Autopsy.—The tumour in the left hypochondriac region was found to be connected with the gastro-splenic omentum, near the spine, and presented the characters of cephaloma; there was another tumour in the pelvis, between the rectum and the uterus; it was connected with the left ovary, and was remarkably movable. The uterus was perfectly healthy. The liver was enlarged, and its anterior surface presented several small white cancerous tubercles; but the greater portion of the organ was occupied by an immense cyst, which contained upwards of half a gallon of fluid, exactly like uncoagulated venous blood. We considered it to be an acephalocyst, gradually developed to this enormous size. Clusters of small cysts were also found connected with some of the intestines, and one was seen on the surface of the liver. Cruveilhier, and many other writers, have specially remarked on the varieties in the colour of fluids collected in cavities in the liver, which are often of a dark olive hue, owing to the admixture of bile, parts of the

walls of the cavities being eroded, and communicating with some duct in the vicinity. In this case there was an erosion of the surface of the cyst; the blood got into the interior of the cavity, and the result was the collapse before death, and the peculiar appearance of the fluid found in the sac. The lining membrane had the appearance of a serous structure, and the finger could be passed through the erosion into the substance of the liver. The preceding case shows the great difficulty attending the diagnosis of cysts in the liver. Cruveilhier states that the pathognomonic signs are yet to be discovered. In the present case no signs existed except such as were owing to compression; there was no pain nor irritation, although the disease must have been of long duration. The contents of the pelvic tumour seemed to be a semifluid substance, somewhat like mortar, mixed up with a quantity of hair.—*December* 11, 1852.

Tubercles in the Liver, Spleen, &c.—Dr. Lees exhibited a series of specimens of tubercular disease of the viscera, taken from the body of a girl aged 18, who had been sent up from the country as labouring under ascites, and was admitted into the Meath Hospital in August last. She had always been healthy until eighteen months previous to her admission, when she began to suffer from constant thirst, to such an extent that she would drink to the amount of seventeen or eighteen quarts in the twenty-four hours; the catamenia were irregular; she observed also, that she passed more water than was natural to a person in health, and she began to swell in the abdomen, the swelling subsequently extending up to the face, and down to the legs. Eight months after the commencement of her illness, paracentesis was performed, but only a cupful of fluid was drawn off. On admission into hospital, she was much emaciated; she passed eleven quarts of saccharine urine daily, of the specific gravity of 1045. This appeared a suitable case to test the value of rennet, a remedy recommended by Dr. Gray of Glasgow, as having the power of converting sugar into lactic acid. Of this she took a teaspoonful three times a day, with very beneficial effects; her thirst was diminished; the headach disappeared; the menstruation became natural; she gained flesh and strength, and increased in weight. The quantity of urine was diminished, and its specific gravity reduced. Several specimens of it were sent to Dr. Barker, who found that the quantity of sugar was very little diminished, but that the specific gravity was lowered from 1045 to 1028,—no lactic acid could be detected in it. Thus the disease was still present, though mitigated to such an extent that she became anxious to go to the country. After this, she got fever and died. On opening the abdomen, we found but a small quantity of fluid. The whole surface of the liver was thickly covered with miliary tubercles. The kidneys were somewhat enlarged and slightly congested. The cortical structure was thickly studded with tubercles. The spleen also was studded with exceedingly minute miliary tubercles. The lungs were filled throughout, from their apices to their bases, with tubercles, and a small cavity existed in the apex of the

right, lined with a membrane. At first, Dr. Lees observed, he suspected the presence of tubercles, knowing their connexion with diabetes, but the great improvement which occurred in the general health made him hope that the patient would eventually recover. The question arises as to whether the fever was an ordinary one, or whether it was symptomatic of the extensive deposit of tubercle. We frequently meet with miliary tubercles in the liver in children, but seldom in a person so old as the patient in the present case.—*December* 18, 1853.

Painful Subcutaneous Tubercle.—Sir Philip Crampton observed:—The case I have to bring forward is that of a young lady about sixteen years of age, very delicate and pale, who had been suffering for three years from excruciating agony in the last phalanx of the middle finger; at first coming on at intervals, and so violently as to make her cry out; becoming then more frequent in its attacks, and finally continuous. No treatment had any beneficial effect; the moment the finger was touched for the purpose of examination, she was thrown into violent convulsions; she completely lost her health, and was obliged to confine herself to her room. On coming to me, her terror lest I should examine it was excessive, and it was at once evident that any attempt at doing so would be useless. She was, therefore, placed under the influence of chloroform, and I was then able to detect a small tumour, about the size of a grain of snipe shot, in the top of the finger, and by two small incisions remove it. Under the skin in this preparation we see the tubercle about the size of the head of a pin. A question here arose of great interest, both to Professor Smith and myself, as to its connexion with a nerve; but even under the microscope we could find no such connexion. The tumour is of a fibrous structure, and very firm; after its removal the patient was quite free from pain, and a year after the operation she was perfectly healthy.—*January* 8, 1853.

Encephaloid Tumour of the Antrum.—Dr. Fyffe exhibited the recent parts in this case, which was that of a soldier, about twenty-three years of age, who had been a glass-blower before entering the service. He was admitted to the General Hospital in the Phœnix Park on the 1st of November, 1852. He stated that, about three months previously, he had been attacked with catarrh, after recovering from which he began to experience a dull, deep-seated pain in the right side of the face, followed soon afterwards by the appearance of a small tumour in the nose. This rapidly increased in size, filling up the right nostril, by its pressure obliterating the left, and passing outwards upon the external surface of the superior maxillary bone. About two months after its commencement it began to protrude from the mouth; and, when the patient was admitted, the tumour had attained an enormous size: it occupied the entire of the right side of the face, and extended from the eyebrow to below the jaw. After his admission it continued to increase, and hemorrhage took place from it every second or third day, up to the period

of his death, the quantity of blood lost on each occasion varying from eight to twenty ounces; that portion of the tumour exposed to the air became sloughy, and during the periods of exemption from hemorrhage, a thin ichorous discharge poured from its surface. During the last few weeks of the patient's life, he complained a good deal of pain in the tumour, and suffered much from the difficulty of taking his food, the mouth being nearly filled by the morbid growth. He rapidly sank, and died on the 30th December, worn out by hectic and repeated hemorrhages. Upon examination after death, the tumour was found to have filled the mouth, nose, antrum, and orbit; above, it extended across to the left side, and had destroyed the ethmoid bone, and absorbed the roof of each orbit; it was here covered by the dura mater. There was no trace of malignant disease in any other part of the body.—*January* 8, 1853.

Alvine Concretions.—Sir Philip Crampton exhibited three large alvine concretions, which, with several others, had been passed by a lady, who for five years had been supposed to be suffering under ovarian disease, and had undergone very severe treatment; the concretions occupied the caput coli, and the tumour which they formed gave the feel of a large, multilocular, ovarian growth. When Sir Philip Crampton saw her, she told him that she distinctly felt hard substances knocking together in the abdomen; and, upon examining the part, he thought he also perceived hard bodies striking against one another. Shortly afterwards she succeeded in passing one of the concretions, and then others came away at irregular intervals, until fifteen were voided; they were very hard, and perfectly solid. It was remarkable that the functions of the bowels were not deranged.

Sir Philip Crampton then alluded to the case of a young lady, whom he had seen along with Dr. Banon, and who also was supposed to be suffering from ovarian disease; she voided large quantities of muco-purulent matter. Tumours about the size of small apples could be felt along the course of the colon, especially in the situation of the caput coli.

With a view to facilitating their escape, the patient was placed upon a bed, with the pelvis raised two feet above the level of the shoulders, and a large quantity of water was then injected through a long tube; upon the same day one of the concretions was voided. The injection was repeated twice a week for six or eight weeks, and on each occasion some of the concretions came away. The patient was perfectly restored to health.

Sir Philip Crampton next detailed briefly the case of a sailor, who came under his care under the following circumstances. While on board ship he suffered severely from diarrhœa; and, obtaining no relief from medical treatment, one of his shipmates formed for him a plug, consisting of two cylinders of wood—one, an inch and a quarter, and the other an inch in diameter; these were introduced into the rectum, and forced up. The patient was then able to go through his duties during the remainder of the voyage. When he

came to Dublin he applied to Sir Philip Crampton, who succeeded in fastening the screw-ramrod of a gun into the bottom of the plug, which was then slowly and with much difficulty extracted.—*January* 15, 1853.

Abscess in the Cerebellum.—Dr. Gordon exhibited a specimen of abscess in the cerebellum, taken from the body of a man, twenty-seven years of age, who was admitted into the Hardwicke Hospital on the 10th of January, having been ill twenty-one days. His symptoms were rather of an inflammatory type; his skin was hot; pulse quick; lips much swollen, and an herpetic eruption was coming out over him; his speech was thick, and had been so for twelve days, during which period he complained of slight pain in the head, and had raved the night before his admission; his pulse had fallen from between 110 and 120 to 40; he complained, when admitted, of intense pain in the head; he was at once treated actively, and an endeavour was made to put him under the influence of mercury. Next morning he was exceedingly restless, tossing himself about, and screaming loudly and incessantly, apparently suffering most intense agony; the temporal arteries were throbbing violently; the head was hot, and drawn back; the chest thrown forward, the knees drawn up, and the muscles of the neck standing out rigid. As soon as he was brought under the influence of mercury, which was pushed to salivation, he experienced considerable relief; the headach nearly subsided; the pupils, which were hitherto dilated, were now contracted, and his head was no longer retracted. He slept a little, took some food, and continued to improve that day. Next morning, about twenty minutes after eating a good breakfast, he lay back and died.

Autopsy.—There was no inflammation of the membranes of the brain, nor effusion of lymph, serum, or purulent matter; the brain itself was rather vascular, but more especially the cerebellum; on making a section of which, a large, diffused abscess was found, the cavity of which was filled with very thick purulent matter; it had not burst, but the upper surface of the cerebellum, by which it was limited, was remarkably thin. There had been no discharge from the ear, nor any pain in it; neither was there any disease of the temporal bone.—*January* 22, 1853.

Vesical Calculus.—Mr. Smyly exhibited a very large oval calculus, which he had lately extracted from the bladder of a female seventy-seven years of age. She had been for a long time subject to prolapsus of the vagina, along with which, a portion of the bladder used to descend; upon such occasions the stone could be plainly felt, and might have been readily cut down upon and extracted, but for the fear of a urinary fistula resulting. The operation by which it was removed consisted in dividing the anterior part of the urethra with a "bistoire caché." The canal was then dilated so as to permit of the introduction of a blunt gorget, along which the forceps was passed and the calculus extracted. The case terminated very favourably; all irritability of the bladder ceased, and there was no infiltration of urine.—*January* 29, 1853.

Induration of the Brain.—Dr. Mayne exhibited a remarkable example of induration of the substance of the brain, and gave the following history of the case:—The patient, a boy about five years of age, was admitted into the South Union Hospital last Christmas. It was ascertained that he had been subject to fits ever since he was three months old; they were at first attributed to the irritation of dentition, but at length they merged into regular epilepsy. On inquiring into the mental functions it was ascertained that all his organs of special sense, with one exception, were healthy; that vision and hearing were perfect, but that his sense of taste was very much depraved; he had an enormous appetite, and would eat anything that was presented to him, not appearing to care what the quality of the food was, provided he got a sufficiency of it. He had no paralytic symptoms. His mother said that he was very silly, and that he was the hardest possible child to manage; that he did not seem to have the least sense of what danger was. She said she once found him sitting in a sewer leading from the privy, not at all inconvenienced by the soil in which he was placed. On another occasion he was nearly drowned in the cistern in the wash-house; another time she found him sitting under the spout, thoroughly wet; and on none of these occasions did he seem to apprehend any ill consequences. On the 15th of December last he had an unusually long fit, and remained stupid for a few hours. This was followed by another of still longer duration. He was then brought to the hospital, labouring under severe congestion of the brain; his scalp was very hot; he was perfectly stupid; the conjunctiva was suffused; the pupils sluggish; there was violent throbbing of the carotids, and he passed his urine and fæces involuntarily. His head was shaved, and leeches were applied over the mastoid processes. The next morning he was almost comatose; he had passed his urine and fæces in the bed the preceding night; his stomach was irritable, and would retain nothing. A dose of calomel was placed on his tongue, and a blister was applied to the back of the neck and another to the scalp. In a few days he was able to sit up and eat his food, but looked very silly, and seemed perfectly unconscious of everything going on around. He improved for several days, when he got another fit, from the effects of which he did not recover for a few days. This was succeeded by others, and he died a few days ago in a comatose state.

Autopsy.—On removing the calvarium the pia mater was found remarkably vascular, and the large veins entering the longitudinal sinus were distended with black blood. On feeling the surface of the brain, several of the convolutions were ascertained to be remarkably hard and indurated. There was one in the anterior lobe of the left hemisphere, another farther back, and two at the posterior extremities,—they felt like cartilage, and when the membranes were stripped off they looked exactly like it; these abnormal convolutions, when cut into, were found to consist of grey and white structure, both of which contributed to the formation of the induration,

and both had in some degree become altered in appearance, the grey being less grey, and the white, less white than natural, so that they both merged into one another, and you could not say where one ceased and the other began. A case somewhat parallel to this was exhibited to the Society by Dr. Carlile[a]. The question here suggests itself,—what is the exact nature of the induration? Cruveilhier thought it owing to an obscure inflammatory action, and that this was the case here Dr. Mayne did not doubt, for the section showed a distinct red line (as red as that observed around the cornea in iritis) surrounding the indurated portion. The clinical history of induration of the brain is yet far from being known, and therefore the preceding case is of interest. There is this hint to be derived from it, that cases of epilepsy in early life are not always to be considered as hopeless, for moderate antiphlogistic treatment might, perhaps, sometimes lead to a favourable termination.—*January* 29, 1853.

Aneurism of the Aorta.—Dr. Lees exhibited a specimen of aneurism of the thoracic aorta, and gave the following history of the case:—Thomas Mullen, aged 23, was admitted into the Meath Hospital on the 20th of January last, complaining of intense dyspnœa, amounting at times to orthopnœa, with cough and pain, referred to the region of the spine of the left scapula; he stated that he was a bargeman on the Grand Canal, and his business was to load and unload the boats of the Company; that about twelve months ago he was engaged in his usual avocations, and having taken off his coat while heated, he remained so for some time, until he became chilled, and immediately afterwards he had a rigor, which was followed next morning by a severe fit of coughing; he has had the cough ever since. Shortly after, he observed that he was unable to swallow any solid food until well masticated, and unless accompanied by some liquid.

About a month after his first attack, he had some dyspnœa, which gradually increased, and which, with the pain in the supraspinous fossa of the left scapula, compelled him to apply for admission into the hospital in August last. He had then great difficulty of breathing; the inspiration was long and stridulous; the stridor being from below; the expiration was long and growling. He had paroxysms of cough every half-hour, without expectoration, and complained of a severe pain in the left supraspinous fossa. He had also dysphagia. In a short time he improved under treatment, and insisted on leaving the hospital, although he was told that he was far from being cured, and that if he continued at his work he would probably drop dead. He resumed his occupation, however, and for a fortnight was able to work as usual.

In the early part of November last, exertion of any kind was followed by the dyspnœa, and palpitations became so distressing that

[a] See Former Series of this Journal, vol. xxi. p. 315.

he was forced to abandon every kind of labour, and on Thursday last he was again admitted into the hospital. He had now a loud ringing cough, stridor from below, dysphagia, orthopnœa, and very severe pain in the left supraspinous fossa. His voice was husky; the nostrils widely dilated; his face of dusky-red hue; and he complained of soreness in the epigastric region. He never had hemoptysis or hematemesis, or any night-sweats.

Upon examining the chest a considerable degree of flattening was observed in the right infraclavicular region; while on the left side, in the same region, there was a slight bulging, the most prominent part being a little to the left of the centre of the clavicle, and here, when viewed sideways, a slight upward heaving impulse was noticed. The pulsation in the left carotid artery was very feeble, and not at all so distinct as that in the right; the radial pulse was barely perceptible at either wrist, but a little stronger on the right side than on the left; there was no jugular distension. The impulse of the heart could be seen and felt in the epigastric region, directly to the left of the xiphoid cartilage. On the right side a very slight degree of dulness was observed on percussing the clavicle, but below this the sound was normal; on the left side, however, the clavicular region was absolutely dull, as was also the entire of the infraclavicular and upper portion of the mammary regions, as far as the lower border of the third rib; the dulness extended across the corresponding regions of the sternum; there was very little cardiac dulness, and posteriorly on both sides percussion gave an abnormally clear sound.

Respiration was everywhere loud and rough, and partook of the diffused bronchial character; at the root of the left lung there was a thick mucous râle, and also, above the spine of the left scapula. Under the left clavicle a double sound was perceived, resembling that of distant churning, and partaking much of the character of the sounds of the heart; the first being intensified, and resembling the systolic; the second, sharper, and like the diastolic sound of that organ. As the stethoscope was moved downwards, these sounds became fainter, and about an inch and a half above and a little to the left of the ensiform cartilage, the sounds of the heart were distinctly heard, clear and without a trace of murmur.

Last Saturday night, the patient complained of increased difficulty of breathing, and pain in the left supraspinous fossa. Sunday, he was much relieved. At five o'clock on Sunday evening the stridor had increased so much, that the nurse could hear it below stairs. Shortly afterwards it ceased, and she went to look at the man; he was in convulsions, and soon after died.

Upon opening the chest, a large aneurism was found, engaging the transverse and commencement of the descending portions of the arch of the aorta; the great vessels of the neck and upper extremities sprung from the centre of the sac. The tumour had burst by a large irregular aperture into the cavity of the pericardium, which contained large clots of blood. The upper part of the left lung

adhered to the posterior portion of the sac. There was no erosion of the vertebræ. The thoracic aorta, throughout its entire course, was studded with atheromatous deposits. The heart was small and covered with fat. The case affords another proof of the truth of what has been so long taught in the Dublin school, viz., the absence of murmur in aneurism of the thoracic aorta.—*January* 29, 1853.

Caries of the Temporal Bone.—Dr. Gordon exhibited a specimen of caries of the temporal bone and abscess in the cerebellum, taken from the body of a young man, aged 21, a chimney-sweep, who had been admitted into the Hardwicke Hospital on the 28th of January, under the care of Dr. Banks. It was stated, that since he was ten years of age he had been affected with a discharge from the ear attended with deafness, but without any ear-ache. About twelve months since he was attacked with fever, accompanied by head symptoms. His present attack began on the 24th January, with shiverings and intense headach; the pain being of a lancinating character, and chiefly referred to the line of the coronal suture; it was as severe during the day as at night, and was greatly aggravated by the erect position. There was a purulent discharge from the right ear, and pain on pressure in the right parotidean region. The patient seemed drowsy, and required to be questioned loudly before he returned an answer. There was no loss of motion, but the lower extremities were weak, the pupils were dilated, and there was watering of the eyes. The temperature of the surface of the body and of the scalp was natural, the pulse 54, full, and intermitting; the action of the heart was also slow and intermitting. Upon the 30th the pulse in the morning was 44, but rose to 56 towards evening; the dilatation of the pupils had increased, and he had been delirious all night, continually leaving his bed. 31st. Delirium this day of a low character, occasionally accompanied by violent jactitations. Pulse, 60 in the morning, becoming more frequent towards night. Late in the evening of the 31st the pupils became greatly dilated, the left conjunctiva suffused, and the whole surface of the body was reduced in temperature. He died at ten o'clock, P. M., without any convulsions.

The temporal bone was extensively diseased, and matter filled the external meatus. The membranes at the base of the brain were acutely inflamed, and lymph in considerable quantity surrounded the origins of the nerves; it was particularly abundant about the optic commissure. The dura mater covering the carious part of the petrous portion of the temporal bone was detached and perforated by a small aperture. It was separated from the bone by lymph; the corresponding portion of the brain also contained pus; and a large abscess was found in the cerebellum; both lateral ventricles contained a quantity of matter similar to that found in the abscess.—*February* 5, 1853.

Aneurism of the Thoracic Aorta.—Dr. Mayne laid before the

Society a specimen of thoracic aneurism taken from the body of a female aged 37, a servant, accustomed all her life to laborious occupation in washing clothes and scouring. She had enjoyed good health until last November, when she began to suffer from a troublesome cough, difficulty of breathing, and palpitations, which were induced even by the exertion of walking up stairs. These symptoms gradually became so severe that she was obliged to seek admission into hospital. It was then discovered that there was no pulsation either in the radial or brachial artery of the left side; a feeble pulse was with difficulty felt in the left carotid artery; in the arteries of the opposite side the pulse was natural. Upon the left side there was a slight degree of turgescence of the veins of the arm and neck. Dysphagia constituted a prominent symptom, and was equally felt, whether she attempted to swallow solids or fluids. The sense of obstruction was always referred to the upper part of the sternum. She complained, in addition, of cough, seldom troubling her during the daytime, but coming on at night with a violent paroxysm. The cough was hoarse and husky, so as to lead to the supposition that it was laryngeal; still the larynx was not affected; the voice was perfectly natural in ordinary conversation. There was nothing abnormal discovered in the cardiac region, or in the right side of the chest; and on the left side there was only a slight dulness, corresponding to the upper bone of the sternum, and to the left intercostal spaces, extending over a region two and a half inches in every direction, passing inwards as far as the middle line, and upwards to the sterno-clavicular articulation. The stethoscopic symptoms were the following:—The respiratory murmur was healthy on the right side, and also over four-fifths of the left; in the upper portion of the left lung, however, under the clavicle, respiration was bronchial and very feeble, and on the opposite side behind there existed some cause producing bronchial respiration, not exactly resembling ordinary bronchial respiration, for there was no dulness along with it. These signs were considered as affording proof of a tumour deep in the mediastinum, which had probably interfered with the vessels going to the left arm and left side of the neck, and had pressed in some degree on the œsophagus and left bronchus. The question was, whether it was aneurismal,—the probability was in favour of this opinion, this being the description of tumour most frequently met with here. Moreover, she complained of intense pain along the clavicle, and shooting along the left intercostal spaces, of a deep and boring character, a pain very characteristic of aneurism. In addition, on applying the stethoscope over the dull region of the sternum, there was an impulse communicated to it greater than that caused by the normal impulse of the heart, the action of which was in the present case weaker than natural; and, besides, as the stethoscope was moved towards the heart, this impulse was felt growing gradually weaker, and suddenly increasing again at the apex of the heart. There was no *bruit de soufflet* whatever,—a circumstance which corroborated the idea of the tumour being aneurismal.

This day week, late in the evening, she had a fit of coughing, from which she fainted, and remained in a state of collapse all night. In the morning it was evident she was dying; there was no pulse in either extremity; the surface was cold and covered with a clammy sweat; the face was sunken; and though very weak, she was able to tell us that she had a tearing pain over the left side of the chest; her body was doubled up with the pain. The left side of the chest was somewhat dull, but she was so weak that an accurate examination could not be made. She lived twenty-four hours from the first commencement of these symptoms, and finally, died in convulsions. On cutting into the left side of the thorax a large quantity of serum, very nearly colourless, issued forth. The entire of the left pleura was occupied by an enormous coagulum of blood, which compressed the lung against the posterior mediastinum; it came from a small opening in an aneurism of the aorta, in the mediastinum, immediately above the root of the lung. The tumour had extended upwards towards the left side of the neck, having the root of the lung below it, and the œsophagus behind it. The left subclavian artery arose from it; it was adherent to and had compressed the first portion of the vessel, so that a probe could scarcely be passed through it. The left carotid also arose from the tumour, and was somewhat compressed by it, but the left vena innominata was pressed upon to such a degree that very little circulation could have gone on through it; and it was owing to the small quantity of arterial blood sent out that we had not a greater amount of venous turgescence; the œsophagus adhered to the tumour; and the left vagus crossed its anterior surface, with which it was closely united; its recurrent branch was adherent to the posterior part of the sac, and was red, flattened, and unravelled. The left phrenic crossed over the point of the tumour. The feebleness of the respiration at the apex of the left lung, and its bronchial character, are to be referred to the pressure exercised by the aneurismal tumour on the upper division of the left bronchus, which was indented by it. There was no erosion of the vertebræ, though tenderness on pressure over the second and third dorsal spinous processes had been complained of.—*February* 5, 1853.

Chronic Disease of the Larynx; Apoplexy.—Dr. Fleming exhibited the larynx of a man aged 68, who had recently died of an attack of apoplexy. At the age of fourteen, his voice was so fine that he was appointed a member of one of the cathedral choirs in this city, shortly after which, however, he was seized, from exposure to cold, with acute laryngitis. The disease was treated in the ordinary manner, and successfully, so far as the life of the individual was concerned, but his voice remained impaired to such a degree that for twenty years subsequent to the attack he could only speak in a whisper; during the last ten years of his life, his voice had become raucous, but it is remarkable that throughout the whole of this period of thirty years, with the exception of the impairment of the voice, he had no symptoms of laryngeal or pulmonary disease; his appearance was that of a person in perfect health, but from time

to time he complained of many anomalous symptoms of a nervous character; and during the last year of his existence some obscure cerebral symptoms manifested themselves. Shortly before his death, which was sudden, he was seized with fits, following each other in rapid succession for fourteen hours. During the paroxysms, his tongue was protruded far beyond the lips, and so congested, that it was feared the mucous membrane would be lacerated.

Upon examination, *post mortem*, blood in large quantities was found effused into the substance of the hemisphere, and also into the lateral ventricles, and the arteries of the brain were everywhere studded with atheromatous deposits.

With respect to the larynx, the rima was found to be obstructed by numerous vegetations of considerable length, and overlapping one another; the posterior surface of the epiglottis was rough, but the trachea was healthy. The muscles of the larynx, more especially the dilators, were hypertrophied, and the inferior laryngeal nerves much larger than natural.

Dr. Fleming alluded to a similar specimen of obstruction of the rima, exhibited on a former occasion by Dr. Stokes; in which the affection was also strictly local, the trachea and lungs being healthy, but the rima so much encroached upon by the vegetations, that water flowed with difficulty through the aperture.—*December* 4, 1852.

Disease of the Knee-joint.—Mr. Hamilton exhibited a specimen of ulceration of the cartilages of the knee-joint in an early stage. The patient, a female, had long suffered from pain in the upper part of the leg and in the knee, for which various remedies had been tried, with temporary benefit. When Mr. Hamilton saw her, there existed an œdematous swelling of the limb, with tenderness on pressure along the outer and upper part of the leg; it was obvious that matter was confined beneath the fascia. The severity of the pain in the leg completely masked the symptoms of disease of the knee-joint: a deep incision was made near the head of the fibula, and the escape of the matter gave relief from the pain for several days. Another collection of matter in the front of the leg, below the knee, was afterwards given exit to. After the relief from pain in the leg, however, which these incisions afforded, had continued for several days, the affection of the knee became distinctly marked, and the sufferings of the patient became so great, that full anodynes failed to procure rest at night. After some time further had elapsed, the tibia became luxated backwards. Her general health suffered in proportion to the severity of the pain and the loss of rest; she had night-sweats and hectic fever. It was at length found necessary to amputate the limb.

Upon examining the interior of the knee-joint, it was found to contain a small quantity of blood; the cartilage covering the condyles of the femur was superficially ulcerated, but the osseous tissue had not been exposed. The corresponding portions of the articular surface of the patella were also ulcerated, and in one situation the

osseous structure was laid bare. There was no purulent matter in the joint. The sac of a very large abscess existed in the leg, beneath the fascia, and matter had also collected between the bone and the periosteum.—*January* 22, 1853.

Fractured Rib.—Mr. Adams brought before the meeting the case of a man who had fallen from a ladder upon the railings in front of a house; one of the spikes penetrated the right side of the chest, breaking one of the ribs and wounding the lung; a considerable portion of the intercostal muscles was torn away, and a large aperture made into the chest. The man was at once brought to the Richmond Hospital. His breathing was most distressing and laborious; air was rushing from the wound, and the subcutaneous areolar tissue was emphysematous, but owing to the size of the wound in the side of the chest, the emphysema did not at any time extend very far. There was no hemoptysis at any period of the case. The respiration was very rapid; at one time it was 70 in the minute, and generally ranged between 40 and 50, while the pulse was 100. He breathed entirely by the left lung, the action of which was interfered with by the accumulation of air and blood in the right pleura. He was constantly throwing his arms about and tossing himself in the bed; the broken rib was exceedingly moveable, and it was found impossible to keep it steady. Death occurred on the sixth day after the accident.

The pleura was found highly inflamed, and the lung was the seat of acute pneumonia, which had proceeded almost to gangrene at the base of the organ; a layer of lymph covered both the costal and diaphragmatic pleura.

In his observations upon the difficulty of keeping the broken rib steady, Mr. Adams alluded to a case treated by Gerard, where, under similar circumstances, a ligature was passed under the bones, and its fractured extremity thus drawn outwards.—*January* 22, 1853.

Aneurism of the Abdominal Aorta.—Dr. Stokes presented a specimen of a large aneurism of the abdominal aorta, the diagnosis of which had been attended with much difficulty, in consequence of the resemblance which the tumour bore to those cancerous masses that form in the abdominal cavity, and receive an impulse from the aorta. The man had great constitutional suffering, constant irritability of stomach, and frequent vomiting, shortly after taking food of any description. The tumour was very irregular in form, and lobulated upon its surface. The history of the case was as follows:—"A man aged 35, much emaciated, was admitted into the Meath Hospital, January 3, 1853; he had led an intemperate life, had worked hard and been much exposed to cold; nevertheless, he was very healthy and strong until about nine months since, when, without any previous symptoms of indisposition, he observed a small circular tumour in the epigastric region, which in a few days began to pulsate, and as it increased in magnitude caused a severe pain, radiating along the

abdomen, but felt most acutely in the back, and aggravated by any exertion. He continued in employment as a carpenter until ten days before coming to the hospital, when the pain became unusually severe, perfectly incapacitating him from working. About three months after the first appearance of the tumour he began to suffer severely from irritability of the stomach, rejecting his food in a few minutes after taking it. This symptom continued up to the day of his death. He never suffered from dysphagia, nor from pulmonary or cardiac symptoms. His most distressing ailments were, irritability of the stomach and pain in the back. The tumour extended from the epigastrium to the umbilicus, and pulsated violently, especially in the direction from behind forwards; the pulsation was diastolic, but the throwing of the tumour upwards was very remarkable. A few days before death, after a careful examination, Dr. Stokes was led to incline to the diagnosis of aneurism, but did not absolutely declare that such was the nature of the tumour. The circumstances in favour of this diagnosis were a loud bellows murmur in the aorta, not communicated to the vessel from the tumour; for if so, it would have been a reflex murmur, and in that case, would not have been loudest at the arch of the aorta. Considering the intemperate habits of the man, it was natural to suppose that the aorta was diseased. Another remarkable circumstance was, that on further examination, a portion of the tumour was discovered projecting towards the left hypochondrium, about the size of a hen's egg; it felt quite fluid, and on applying the stethoscope over it, there was heard a sharp, intense *bruit de soufflet*, while immediately over the aorta there was heard a deep, hoarse murmur. So far as we know of the murmur produced by pressure of a tumour, it is similar over its whole extent, whereas here there were two distinct kinds of bellows murmur; this tended to strengthen the diagnosis of aneurism. Three days before his death he had a sudden attack of extreme weakness and prostration. His death was easy, although sudden. Among the many points of interest in the post-mortem examination, it was found that, though the patient died of rupture of aneurism of the abdominal aorta, the blood did not take the ordinary course. In such cases in general it enters into the cavity of the peritoneum, which becomes filled with blood—here, however, there was not a drop of blood in the peritoneum. Sometimes the blood makes its way behind the peritoneum, and forms a large diffused aneurism in the loins, which has been mistaken for psoas abscess. In the present case the blood was effused in great quantity between the layers of the mesentery. The heart and its valves were healthy; a few patches of atheroma were seen in the aorta, but it was otherwise healthy as far as the cœliac axis, immediately below which was situated an immense aneurism, which communicated with the aorta by an oval opening, two inches and a half in length, situated in the posterior wall of the vessel. There was no erosion of the vertebræ. The lower part of the sac had given way, and a large clot was contained between the layers of the mesentery.—*January* 15, 1853.

Obliteration of the Vena Cava.—Dr. Banks exhibited a morbid specimen, taken from a man, aged 50, a woolcomber, who, on his admission to hospital, stated that up to two years previously he had been in good health. He was then suddenly seized with rigors, and after this was obliged to rise several times through the night to pass water; he noticed also several clots of blood in the urine. After this he was admitted into the Meath Hospital for scurvy, where he remained for a month, when, considering himself perfectly well, he returned to his employment, but was soon obliged to abandon it from increasing debility. On the 6th of July last he was admitted into the Richmond Hospital, apparently labouring under catarrh of the bladder. On the 1st of September he was transferred to the Whitworth Hospital.

On admission he complained of great thirst, loss of appetite, and general weakness; and through the night was obliged to get up seven or eight times to make water, passing a very small quantity at a time; he had also ardor urinæ. He was pale and anemic in appearance, and presented the sallow complexion of patients labouring under chronic renal disease. He never had any dropsical symptoms, nor did he notice the slightest œdema of the lower extremities. He had on one leg the traces of a varicose ulcer, which had healed about two years ago, having been open for several years; he had varicose veins over his lower extremities, and over the upper part of the abdomen, extending above the epigastrium; there was no abdominal tumour. His urine was examined on admission, and repeatedly afterwards; when first voided it looked exactly like milk, but on standing, there was a deposit of about one-fourth of the fluid. White and creamy oil globules were occasionally seen under the microscope, and through the whole course of the disease pus globules were present in abundance. He suffered exceedingly from irritability of the stomach, and rejected his food, whether liquid or solid; occasionally a small quantity of blood appeared in his urine; he complained of pain and weakness in the loins; but loss of rest and extreme irritability of stomach were the sources of his chief distress. On the 10th of November last a very large anthrax appeared on the lower part of his back, from which, however, after a long and tedious suppuration, he completely recovered. On the 18th of January last all his symptoms became greatly increased; the quantity of pus in the urine was augmented, and the appearance of blood became more frequent. On the first of this month he had an attack of diarrhœa which lasted for three days; subsequently he was attacked with general capillary bronchitis, and this seemed to be the immediate cause of his death, which occurred on the fifth of this month.

On opening the abdomen the kidneys were found destroyed by suppuration to a great extent; they contained a large quantity of purulent matter, and two small calculi were found in one of them. The bladder was small and contracted, presenting the usual appearances of chronic inflammation. On examining the venous system, the inferior cava was found obliterated from its junction with

the iliacs to the liver. The right iliac vein was also obliterated throughout its whole course; the left was open for half its extent. The vena cava was partly converted into a fibrous cord, and presented in some portions the appearance of the sciatic nerve. In other parts clots of blood were found to exist. The hepatic veins were enlarged to, perhaps, one-fourth more than their natural size; the portal veins were also enlarged, but the azygos, where it opened into the superior cava, seemed to be obliterated.

Cases such as the preceding, Dr. Banks observed, are rarely seen in practice. The occlusion of the vein was probably due to a local phlebitis, the vessel becoming plugged up with coagulum, and subsequently degenerating into a cord. There are many cases of complete occlusion of the inferior and superior cava mentioned by Morgagni and Haller. Cruveilhier mentions a case in which, as in the present instance, there was neither dropsy nor œdema. The obstruction probably takes place gradually, so as to admit of a collateral circulation being established. In general the vena azygos supplies the place of the obliterated cava; but Cruveilhier mentions a case where there was no augmention of the former vessel, and he supposes that the spinal plexus was the means of establishing the communication. —*February* 12, 1853.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

SESSION 1852–53.

Third Meeting, Thursday, 27th of January, 1853.

Dr. Shekleton (Master of the Dublin Lying-in Hospital) informed the Society that since the publication of the Proceedings of the first Meeting of the present Session, he had another opportunity of testing the efficacy of the douche bath as a means of induction, and had again found it most successful; but, as the mode of application in the present instance, as well as the circumstances calling for interference, differed materially from those already brought before the Society by Dr. Atthill, he thought it would be a matter of interest were he to detail the history of the case shortly.

Mary Fells, a woman having an unhealthy appearance, applied at the Dispensary of the Lying-in Hospital, in November last, to get relief, under the following circumstances:—

She stated that she suffered much inconvenience from the enlarged state of her abdomen, consequent upon considerable dropsical effusion into the peritoneal cavity; and that, in addition to the distress arising from the distention of the dropsy, she fancied herself

pregnant, her menstruation not having returned since the June prior to her application, and some of the other ordinary symptoms of that state having occurred in due order.

Upon examination it was found that she was perfectly correct in the opinion she entertained as to her being pregnant, for by a little manipulation, through the excessively distended walls of the abdomen, the enlarged uterus could be traced to a certain extent, and auscultation announced the existence of the fœtal heart; as far as could be judged, she was at least five months gone with child.

She stated that the dropsical symptoms had not evinced themselves prior to her present pregnancy, but that, less than a month after the cessation of the last catamenial discharge, she suffered some obscure "dragging pains" in the right hypochondrium, which were followed by a brisk diarrhœa (causing her to seek for aid in one of the Hospitals of the city), and that after the urgent symptoms were checked, "she first commenced to enlarge;" having attained her present size in less than four months. She also stated that she was nearly forty years of age, the mother of seven children, four of them alive and healthy; that her own health, up to June last, had always been excellent; and that she had always led a temperate life. She was prescribed for with a view to lessen her present distress, and she was given an admission ticket for her approaching confinement.

On the 8th of the present month (January) she again presented herself, being forced to seek relief in consequence of the increased distress induced by the now enormous distention of the abdomen, impeding considerably her respiration; added to which, she had latterly some hematemesis, and had passed some blood per rectum; her countenance was now collapsed; her belly tense, its walls much attenuated, and her girth round the waist measured four feet two inches. The uterus could not now be traced; neither could we hear any fœtal sounds, but she said that she felt the motions of the child strongly. By vaginal examination the cervix was found not as yet obliterated, and a small fœtal head could be distinguished, presenting above the incompletely expanded neck.

Under existing circumstances it was deemed expedient to induce labour; and thereby to remove so much of the additional bulk as was caused by the gravid uterus, before attempting any operation for the discharge of the effused fluid. This, then, was an admirable case for the douche bath; but it was determined to try it in a simpler form than that which had been previously used,—the apparatus employed being the common elastic bottle-syringe, manufactured by Robertson, of this city, and made use of in the Rotundo Hospital for injecting the vagina, uterus, and rectum with cold water, in cases of postpartal hemorrhage. Accordingly, upon the evening of the 9th, the first douche was applied in the following manner:—She was put upon her left side, in the ordinary obstetric position; a large pan, holding nearly two gallons, was filled with tepid water, and placed upon a stool at a convenient distance from the bed;

another (smaller one) held so as to catch the water as it poured from the vagina, after having played against the os uteri. One person now introduced the bone-pipe at the end of the flexible tube, and with the index finger guided the stream against the orifice of the uterus, which was forced onwards by another person, who held the bottle extremity of the apparatus in the large reservoir of water. The process was continued for about five minutes.

On the evening of the 10th, the lips of the os were found soft and flaccid, and the os itself somewhat dilated. In the same manner, and for the same length of time, the second douche was applied.

On the afternoon of the 11th, the os was found about the size of half-a-crown, when the third application of the douche was made; and labour came on almost immediately after (half-past three o'clock, P.M.), and terminated at half-past ten o'clock at night; being of seven hours and a half duration. The first stage was a little tedious. At about ten o'clock the os was fully dilated; the membranes were then ruptured, and a very trivial quantity of liquor amnii evacuated. It was now determined to administer some ergot of rye, but while it was being infused, the uterus with a powerful effort expelled the child, which for a child seven months gone (according to calculation) was exceedingly small and puny. As a precaution, however, against hemorrhage, the ergot was administered, and also some wine. The uterus expelled the placenta by its own efforts in a few minutes; and there was not any attempt at hemorrhage. She expressed herself much relieved after her delivery, and although the decrease in size was not very appreciable, nevertheless, her respiration became much easier. It may be here stated that the child lived only forty-eight hours.

She continued in this slightly improved state until the 13th; but on the evening of this day, she suffered dreadfully from dyspnœa, and prayed so hard to be relieved from the pressure of "the water," that tapping the abdomen was performed, and twenty-seven pints of straw-coloured serum drawn off; the removal of this quantity reduced the abdomen to a little less than half its former dimensions; after the operation the dyspnœa was much less, and she expressed herself as gratified at the result; but her improved condition only lasted for a day or two; she then gradually retrograded; on the 20th coma supervened, and she died on Friday the 21st, ten days after delivery.

On post-mortem examination, the abdomen was found to be still largely distended, and on being laid open more than two gallons of fluid were discharged; the intestines were seen to be much distended by flatus; there was increased vascularity of the peritoneum lining the pelvis, and lower part of the abdomen, especially on the left side (where the trochar entered), and there were also a few flakes of lymph floating in the dropsical fluid.

The liver was a well-marked specimen of cirrhosis; the spleen was as large as an ordinary-sized liver, and on section had much the appearance of that organ.

In this short history there are some points of interest, independent of the process of induction. In the first place, there was no dropsy of the amnial sac ; indeed, to the almost complete absence of liquor amnii might be attributed the delay in the first stage. Again, the rapidity with which the second stage was concluded,—lasting but a few minutes, although the abdominal muscles were totally excluded from any participation in the expulsive efforts,—is worthy of remark; thus, although the dropsy might have been deemed a complication which would tend to retard to a considerable degree the expulsive stage of the labour,—incapacitating, as it did, the abdominal muscles from taking their share of the parturient efforts,—nevertheless, by being the cause of the diminutive size of the fœtus, it made up for the power it robbed from the uterus, by indirectly lessening the bulk of the body which that organ had by its own unaided efforts to expel. The weight, also, of the effused fluid might have had some considerable share in keeping the uterus well contracted during the third stage, and preventing (after the expulsion of the placenta) any hemorrhage, thus supplying the place of the hand, which in this instance could not have been applied.

But what is more especially to be noticed in the case is the means whereby labour was induced, and the complete success thereof. The apparatus was much more simple and easy of application than the one used in our former case (viz. Kiwisch's); its effect was magical, the os being opened to about one-sixth of its complete dilatation after the second douche, and labour setting in almost immediately after the third, the patient suffering no inconvenience whatever, not even requiring removal from her couch.

The method adopted in this case is, doubtless, the same as that employed by Professor Simpson, differing only in the species of "hand syringe,"—his being, I believe, an elastic cylinder, with a tube at either extremity, the one vaginal, and the other for conveying the water from the reservoir into the cylinder, in order that the hand may force it into the vagina by contracting its caliber, appropriate valves being placed so as to regulate the ingress and egress of the fluid ; while ours was (as described) the common bottle-syringe. I have no experience of the syringe used by Dr. Simpson; but the latter was found to be rather distressing to work with sufficient force for five minutes, and perhaps his would be liable to the same objection ; therefore, should another case present itself for induction, I have it in contemplation to employ the stomach pump, in order to obviate manual distress.

In conclusion, if it be true that the manner in which labour is induced by the douche is, as described, merely by the water acting as an external soft wedge, insinuating itself into the os and between the internal surface of the cervix and the membranes, detaching the latter from the former (which explanation I have every reason to consider correct), I do not see why we should not—by imitating more closely the first stages of labour from without, and by repeated

douches of moderate duration, and at intervals proportional to the duration of the intervals of that stage—in one day bring on the required labour. Upon this principle I purpose acting, when another opportunity presents itself.

Dr. Churchill read a paper on the rhythm of the fœtal and infantile heart. After detailing to the Society the observations he had made, he submitted the following conclusions, as deducible from them: First, That the pulsations of the fœtal heart range from 110 to 160 per minute, the average being somewhat about 136; and the audible sounds double that number, therefore ranging from 220 to 320. Secondly, That, of the two sounds, the first is the weaker, and less distinct; the second, loud and distinct. The first audible only within a short distance of the fœtal heart; the second over a considerable extent of the uterine tumour. Thirdly, That the rhythm may be expressed by dividing the entire period of a pulsation into four parts, and placing a dot under the figures according to the succession of the two sounds, and an accent over the more distinct, as, 1̇, 2̇, 3, 4. Fourthly, That immediately after birth the first and second sound of the heart become equally loud and distinct from an increase in the first sound. Fifthly, That the rhythm changes, and may be expressed thus, 1̇, 2, 3̇, 4. Sixthly, That this peculiarity of the rhythm continues for about a year and a half or two years; and then gradually changes to that of the adult, expressed thus, 1̇, 2̇, 3, 4, with the first sound stronger and longer than the second. Seventhly, That the circulation increases in rapidity immediately after birth, after which it subsides by degrees to the usual infantile standard.

Dr. M'Clintock read the following report of a case of strumous peritonitis. The subject of it was a girl aged sixteen years, with dark hair, florid complexion, of rather inactive habits, and who, previously to this illness, had enjoyed uninterrupted good health. She lived with her parents; they resided in the country, some miles from town, and had nine children, all of whom were apparently free from any trace of disease. My attendance began on the 12th of April, 1851, and during its continuance Surgeon Richardson, of North Frederick-street, occasionally saw the patient, and gave me the benefit of his advice in the treatment. For several days prior to this, she was observed to be dull and languid, and to have a disinclination for all food. The tongue was foul, the pulse quickened, the bowels very much out of order; she complained of thirst and loss of appetite, and the complexion was of a muddy yellow colour, very unlike her natural hue: at the time of this visit the catamenia were present. She was ordered some alterative and aperient medicine, and directions were given for the regulation of her diet. When next seen (some days afterwards) she was in no respect better, and felt so indisposed that she was forced to keep her bed. The pulse was 100, soft and weak; the tongue coated; total loss of appetite; thirst and diarrhœa; she com-

plained of some vague uneasiness in the belly, and of pains like colic before and with the evacuations; firm pressure was borne, however, on every part without giving rise to any unusual discomfort. There existed a slightly œdematous swelling of the feet and ankles, and on making a more minute examination of the abdomen (which seemed to be preternaturally full), I found a very perceptible fluctuation therein. The discovery of these dropsical symptoms led to a particular investigation into the state of her lungs and heart, but no traces of disease could be detected in these organs; every region of the belly was carefully explored, but there existed neither pain, tenderness, nor tumour in any situation. No trace of albumen was present in the urine, though carefully sought for; the secretion, however, was greatly diminished in quantity, of a high colour, and deposited on cooling much yellowish amorphous sediment. The constant presence of bowel complaint, with occasional sick stomach, forbade the employment of any active medical treatment. The other symptoms at this period of her illness were as follow:—Pulse weak, and varying in rapidity from 100 to 120, generally most frequent towards evening; constant thirst; complete anorexia; considerable emaciation; great languor and weakness; tongue thickly coated; alvine evacuations very offensive, and composed of a brownish liquid.

A week subsequently, the abdomen was found to have increased considerably in size, but the diarrhœa had moderated, so that the introduction of mercury into the system was now tried in a more decided manner than heretofore. To the adoption of this mercurial treatment we were the more encouraged, by its receiving the sanction of Dr. Johnson, who was consulted about the case at this time. A strong mercurial liniment was rubbed over the belly and into the groins, night and morning; and small doses of blue pill and opium were substituted for the gray powder, &c., she had been previously taking thrice a day. At the same time the most scrupulous attention was paid to the diet, with a view to restrain the tendency to diarrhœa. Such was reported to be her state and the treatment on May 5th. For some days before and after this date, there was observed to be a very manifest increase of fever towards evening, the pulse rising to 120 or 128, and along with this, great flushing of the face, thirst, and headach; in this stage, also, there was for the first time observed to be some deep-seated tenderness in the epigastric region.

On the 12th of May, there was incipient ptyalism, and contemporary with this, an amendment took place in some of the more important symptoms. The abdomen began to diminish, the urine to increase in quantity, and to appear of more natural quality; the pulse, too, was abating in frequency, and the tongue losing its foul coating.

Her recovery may be said to date from this epoch, although it was much retarded by one or two partial relapses, and not complete for some months.

After the effusion into the peritoneal cavity had been entirely

absorbed, and all the bad symptoms had disappeared, there remained so much emaciation and debility, together with an irritable state of the gastro-intestinal mucous membrane, as to require a more than ordinary degree of prudence and caution in her general management. Menstruation did not recur for three months, but has continued regular; and her general health, too, has since been unimpaired. To the above cursory outline of this case may be added the following particulars:—Diarrhœa was a constant symptom all through the patient's illness. In the beginning we were not over-solicitous about checking it; and when we attempted to do so, it proved most obstinate, and consequently contributed not a little to pull down her flesh, and exhaust her strength. The urine was tested several times in the usual way, but on no occasion was the presence of any trace of albumen found. It is deserving of particular notice, that the abdominal tenderness did not amount to anything very marked or decided, and had no existence until a comparatively advanced period of the disease, certainly not until some days after the symptoms were fully developed, and after effusion had taken place into the abdominal cavity. Upon this symptom Dr. Abercrombie thus expresses himself:—"In other cases there has been no actual pain, but a feeling of tenderness, which gave rise to uneasiness on pressure, or when any part of the dress was tight over the abdomen; but in many cases the disease steals on to an advanced period, without any complaint either of tenderness or pain;" this was literally verified in the case before us.

From the very commencement of the above case the pulse was the reverse of inflammatory, being weak and compressible, so as plainly to contra-indicate bleeding, even did the other symptoms seem to require it—which, in my opinion, they did not.

It will, no doubt, have been observed what a rapid change for the better followed the appearance of ptyalism. This improvement was first manifested by an increase in the quantity of urine, and a diminution in the bulk of the abdomen, as shown by daily measurement, thus agreeing in every particular with the experience of Sir H. Marsh, who, speaking of cases of this description, writes:—"In many instances I have noticed a marked subsidence of the symptoms, a copious secretion of urine, and a diminution of the abdominal distention to have been coeval with the first perceptible effects of mercury upon the constitution." Although the use of mercury was persisted in for some days after it had produced ptyalism, salivation did not take place, and even the former effect of the drug was exhibited in a very trivial degree; it was sufficient, however, to indicate that the system was brought under its influence, and no more than this was requisite to conquer the malady.

In about a fortnight from the first appearance of amendment, the disease was so far subdued as to permit of a moderately generous diet being used; among other things she got a liberal allowance of ass's milk, from the employment of which she seemed to derive marked benefit. After the administration of mercury was stopped,

she was ordered small doses of hydriodate of potash and liquor potassæ thrice daily, which possibly may have promoted the absorption of any fluid remaining in the peritoneal cavity. After the abdomen had nearly returned to its normal size, an indistinct tumour was perceptible in the epigastric region, which did not disappear for some weeks. I would hardly have thought this worth mentioning, but that Sir H. Marsh observed the same in some of his cases.

There can be little doubt, I imagine, that this case is to be referred to the same category with those which Sir H. Marsh and Dr. Churchill have described under the name of "Strumous Peritonitis with effusion:" the resemblance falls short, however, in two points—non-essential ones, I admit, but still worthy of being noted. First, in the case just related, no abdominal pain or tenderness was present until after the other symptoms (including the peritoneal effusion) were fully established: and secondly, neither the patient herself, nor one of her brothers or sisters—and be it remembered they were nine in number—bore any trace of scrofula; all were alive, and, with two exceptions, in rude health; the exceptional instances being the one case I have recorded, and a younger brother, who had three or four slight epileptic attacks. I think it right just to mention these facts, although I would be unwilling to rest on them the assumption that the above case did not partake of a strumous character; nevertheless, it plainly teaches us, that the disease in question does not by any means require for its production a well-marked strumous diathesis. Dr. West agrees in opinion with Baron, that this disease is invariably associated with the tuberculous cachexia; and moreover affirms, "that the occasional recovery of a child in whom the symptoms of chronic peritonitis have existed, by no means disproves that connexion between it and phthisical disease, of which dissection in fatal cases affords such convincing proof." As bearing upon this point, it may not be uninteresting here to mention, that this girl's father, when a young man, was pronounced by the late Drs. Cheyne and Colles to be in pulmonary consumption; and although he did not die, he has ever since been what is commonly called asthmatic, and has flattening below the left clavicle, with dulness and feeble respiration in that situation.

In studying the pathology of this affection, we should not confine our attention merely to the abdomen, or regard this lesion of its serous membrane as peculiar to the peritoneum; on the contrary, it is to be viewed, I think, as a particular example of an affection to which all the great serous cavities of the body are liable; thus we find this tubercular form of inflammation attacking the arachnoid, the pleuræ, the pericardium, the peritoneum, and also the synovial membranes. In each of these situations the disease presents a certain group of symptoms, which can hardly fail of being recognised, so strong is the family likeness between them; and in all these cases it is the mechanical operation of the liquid effusion which chiefly regulates the character and modifications of the symptoms.

It is interesting to observe, however, that the same medicine, used with the same restrictions and cautions, is the *nobilissimum remedicum* in, I may say, all these different forms of disease. To Sir H. Marsh undoubtedly belongs the credit of first pointing out the utility of its administration in strumous peritonitis; to Surgeon O'Beirne the profession is indebted for the successful application of mercury to the treatment of scrofulous affections of the joints; and Drs. Percival, Dobson, and Cheyne, long ago insisted upon the great value of this same agent in tubercular meningitis.

Dr. Lyons read a short biographical memoir of the late Professor Kiwisch von Rotterau, so well known by his obstetric writings; and more especially as being the first to apply the douche for the induction of premature labour.

Case of Maniacal Delirium, in which Chloroform was administered internally. By J. R. Harvey, A. B., M. D., M. R. C. S. England, Physician to the South Charitable Infirmary and to the Lying-in Hospital, and Professor of Midwifery in Queen's College, Cork.

In our present very limited knowledge as to the powers of this remarkable agent any new facts cannot fail to be interesting. Not much is known of its effects when taken into the stomach, and, as far as I am aware, no account has appeared in the Irish periodicals of cases in which it was administered, except those by Mr. Butcher and Dr. Duncan, and in these it was given for the relief of delirium tremens. The following case affords reason to hope that it will yet prove more extensively applicable. It would seem not unlikely that it may produce calming effects in cases of insanity, which cannot be obtained from opium or other ordinary narcotics; but more materials must be collected before we can draw any decided inferences.

The quantity given in the case I am about to narrate was, I believe, larger than in any previous one. On Wednesday, the 12th January, 1853, I was requested by Mr. Oakshott to see Mrs. ——, aged 44, who had been labouring under symptoms of fever since the previous Saturday. The case would have been considered slight, but that her agitation and hurriedness of manner were more than in proportion to her other symptoms. There was not much headach, thirst, or heat of skin; pulse not above 88, but rather weak; bowels and kidneys acting fairly; the tongue was closely coated with a white creamy fur, such as frequently degenerates into a dry and black condition in the latter stages of typhus. There was little change for the next two days, except that her nights became more and more disturbed, and her manner more agitated and indicative of great but undefined apprehension.

The night of Friday, the 14th January (the seventh of her illness), was passed without sleep, and she was frequently delirious; and next morning her manner was unusually hurried and anxious, but it was somewhat quieted for a while under a mixture containing ammonia and camphor. She readily consented to the removal of her hair, and she enjoyed the application of cooling lotions to the head. In the evening, the agitation and sleeplessness continuing, her feet were fomented, and she had a draught containing fourteen minims of Battley's sedative liquor, and twelve minims of antimonial wine, in camphor mixture.

This produced no sleep; she was violently delirious, and constantly attempting to get out of bed throughout the night, and, as the succeeding day advanced, her condition was altogether that of an insane person. The tongue cleaned in part, and her pulse became accelerated, and for the following three days and nights any one who had not seen the case from the commencement would have considered it one of pure mania. During this time opiates and antimonials combined, both in full doses (40 minims of tincture of opium, and the same quantity of antimonial wine, followed by smaller quantities), frequently repeated, were equally without effect. The violence, the sleeplessness, the maniacal gestures and actions, continued unabated, and she required the constant vigilance of three or four attendants.

Under these circumstances it occurred to Dr. Townsend, the benefit of whose assistance we had for the previous few days, whether chloroform might not afford results similar to those obtained in delirium tremens, and, accordingly, there appearing nothing to prevent a trial of it, we resolved to administer a drachm of the medicine in water, precisely as had been done in Mr. Butcher's case. Mr. Oakshott gave it himself, and carefully watched its effects;—I give the particulars of his memoranda taken at the bedside:

"Wednesday night, Jan. 19.—Pulse 112. 25 minutes to 11 o'clock. Gave a drachm of chloroform; she gradually ceased talking. 15 minutes to 11. Asleep. 11 o'clock. Pulse 84; respirations, 22. 3 o'clock. Awoke, but was calm. Half-past 3. Arrow-root and wine; returned to sleep. Half-past 4. Awoke, wild; pulse 92; dose repeated. 20 minutes to 5. Fast asleep; pulse 76.

"Thursday, the 20th.—Sleeping nearly all day; tea and plain arrow-root. To have a castor-oil draught, with compound tincture of senna. 3 o'clock, P.M. Pulse 78; respirations 20; wine and arrow-root."

In the evening she was comparatively quiet, but the maniacal excitement was easily aroused: it was determined to continue the chloroform, and foment the feet. The memoranda of Thursday night were as follows:

"20 minutes to 12. Gave a draught (1 drachm) of chloroform; pulse 88; respirations 20. 10 minutes to 12. Asleep. 12 o'clock. Pulse 72; respirations 18. Quarter-past 12 o'clock, and again at 1 o'clock. Vomited and strained; went to sleep immediately; slept

till half-past 3, when she took wine and arrow-root. Half-past 4. Pulse 88; respirations 20; she was unsettled; gave another dose. Quarter to 5. Asleep. 5 o'clock. Coughed and awoke; very violent; gave half a drachm of chloroform. Quarter past 5. Asleep."

She then slept continuously till 3 o'clock, P. M., a period of nearly ten hours, and awoke greatly calmed.

On Friday night she took a drachm at a quarter past 12 o'clock, and at 25 minutes to 1 was fast asleep. This night was passed very quietly; the pulse from 58 to 60, soft and full, and respirations 18. After this the chloroform was suspended, the bowels were relieved by a warm aperient, and she had moderately supporting diet.

On the afternoon of Sunday, the 23rd, there were indications of returning excitement, the pulse rose to 96, and she became restless. "A drachm of chloroform was administered at 10 minutes past 3, A. M. At a quarter past 4 she was fast asleep. At half-past 4, pulse 64; respirations 18. Half-past 8 o'clock. Still asleep; pulse 80; respirations 20."

From this time she steadily improved, and her recovery was complete.

This lady had a similar attack of illness about sixteen years ago, and she since lost a brother by fever. He had violent maniacal delirium, under which he sank.

Case of Abscess in the Head of the Tibia, with Operation. By R. R. Gelston, M. D., Surgeon to the County Infirmary and City Infirmaries, and Physician to the City Gaol and St. John's Fever Hospital, Limerick.

John O'Donnell, a labourer, of scrofulous diathesis, aged 21, was admitted into the County Limerick Infirmary under my care, about five years ago, for violent inflammation of the periosteum covering the upper third of the right tibia, induced by a kick from a horse, received eight or nine days previously to admission. There was much pain upon the slightest pressure, and the limb was considerably larger in circumference than the other. I first tried what counter-irritation with iodine and blisters would do, in conjunction with mercurial treatment, but the pain not succumbing to this, I laid bare the tibia to the extent of six inches, and freely divided the periosteum, which relieved the pain, and finally reduced all enlargement; he was discharged perfectly cured in about three weeks after admission.

This patient was again admitted under my care on the 27th of November, 1852; when he stated, that he received a blow from a stick immediately on the tubercle of the right tibia, producing the same symptoms, but in greater severity than he suffered on the former occasion. I again tried mercurials and blisters, but with such little benefit, that I freely divided the periosteal covering of

the tibia, which was followed by much relief, continuing for about a week, when greater pain, and of a boring character, again set in, preventing sleep. The head of the affected tibia was now considerably enlarged; and I felt satisfied that there was an abscess in the medullary canal of the bone, and advised trephining it. This was done at once, and upon removing a circular piece of bone, fully four ounces of purulent matter escaped; this was done on the 17th of March, and the quantity of pus which continue freely to discharge itself through the artificial opening was surprising. The poor fellow slept well the night after the bone was trephined, and continued to do so; in two days all pain disappeared, and he rapidly progressed towards recovery. The size of the piece of bone removed is shown by the annexed outline.

On a New Method of detecting Strychnia and its Salts. By Edmund William Davy, A.B., M.B.T.C.D., Lecturer on Chemistry in the Carmichael School of Medicine, &c.

In the course of some recent experiments on strychnia, I discovered a new method of detecting this alkaloid and its salts. It is as follows:—To a little of the strychnia, in powder or small crystals, add a drop of undiluted sulphuric acid so as to moisten it, then a little of the ferridcyanide of potassium (red prussiate of potash), either in powder, or a drop of a strong aqueous solution, and mix them well together, when a fine deep violet colour will be immediately produced. This test is one of such extreme delicacy, that a quantity less than the 1–1000th part of a grain will afford an intense violet, which can be extended over a considerable surface. As an additional proof I dissolved the 1–50th part of a grain of strychnia in 1000 grains of distilled water. One drop of this solution, weighing one grain, on being evaporated on a surface of glass, and treated as referred to, afforded a faint but characteristic violet shade, though containing only the 1–50000th part of a grain of the alkaloid.

I am aware of the beautiful and delicate test for strychnia proposed first by M. Lefort, and afterwards by Mr. Lewis Thompson, viz., by moistening that alkaloid with strong sulphuric acid, and then adding to it a little of the bichromate of potash, when a fine violet colour, like that I have stated, will be produced.

That method has hitherto been justly regarded as the most delicate and characteristic test of strychnia, and was the one lately employed by Professors Graham and Hofmann, in their experiments on the alleged adulteration of pale ales with strychnia.

The test which I have proposed appears to me to be fully equal in delicacy to M. Lefort's, whilst at the same time it possesses certain advantages over it. The violet colour produced in my test is less fleeting than in M. Lefort's. In the latter the violet quickly changes

to a brown or olive shade, whereas in mine the violet passes more slowly into a light brick-red colour, which remains for several hours, and is itself highly characteristic. My test seems, generally speaking, less affected by the presence of organic matter than M. Lefort's; thus in the latter, the presence of a little alcohol, ether, or sugar (with the strychnia), destroys the test immediately, and instead of the violet colour, a green is produced, from the oxide of chromium formed; whereas in like circumstances, using my test, the characteristic violet colour is produced, being little affected by the presence of these substances. From comparative trials with both tests, I find that the vegetable matter in ale and porter has a less injurious effect with my test than with M. Lefort's. I may remark, that in cases where strychnia is present along with organic matter, it is desirable that the latter should first be separated as much as possible from the alkaloid, by some of the methods recommended for that purpose, as the presence of organic substances interferes more or less with the application of either test, and it is necessary in both tests that the sulphuric acid employed should be strong, for I find that if the acid is much weaker than sp. gr. 1·488, the desired effect will not be produced.

On a New Mode of Producing the Instantaneous Coagulation of Blood in the Arteries. By Dr. Pravaz, of Lyons.

The mode which M. Pravaz proposes for coagulating the blood in arterial vessels consists, says M. Rayer, through whom the communication was made, in injecting a few drops of solution of perchloride of iron at the maximum of concentration. This injection should be introduced very obliquely through the walls of the artery by a sort of gimlet motion of the injection instrument. To a trocar is adjusted a syringe, the piston of which should be worked by a screw, in order that the injection may take place gradually, and that the quantity of fluid injected may be accurately measured; it is also necessary to arrest momentarily the course of the blood in the vessel, and to take some other precautions which will be more fully understood after the description of the experiments made by Dr. Pravaz, in the Veterinary School of Lyons, in presence of M. Lallemand, and of M. Lecoq, Director of the School. First, The carotid artery of a full-grown sheep having been laid bare, the circulation was interrupted by compression made with the thumb and index finger at two points, about an inch and half or two inches distant from each other. There might be a spoonful of blood intercepted in this space. A puncture was made very obliquely across the wall of the artery, and three or four drops of solution of perchloride of iron were injected. To accomplish this, two complete turns were given to the screw of the syringe, each of which corresponded to the expulsion of about two

drops. Immediately after the injection of the salt an augmentation in the density of the blood was felt by the compressing finger; the clot could be perceived *forming* rapidly, and four minutes after, it was considered that the artery might be left to itself, and all compression withdrawn. In fact the coagulum did not change its position, and was felt in the same place during the eight following days. Second, The experiments performed, in the same manner, on the carotid artery of a horse, gave a similar result. The portion of artery in which the circulation had been suspended was upwards of three inches long, and might contain five tea-spoonfuls of blood. Eight or ten drops of solution of perchloride of iron were introduced, Dr. Pravaz having ascertained that about two drops of the salt were necessary to coagulate a tea-spoonful of blood. In four minutes the clot had formed in the artery, as in the case of the sheep; it was hard and resisting, and was not displaced by the impulse of the blood during a quarter of an hour. The portion of artery which had been experimented on was then removed, and, on slitting it open, its internal surface was found to be roughened, and to present granulations and longitudinal striæ in the entire extent of surface occupied by the clot. Third, The experiment was repeated on another horse in the same manner, and with similar *immediate* results. This animal, however, was kept with the artery exposed during eight days, in order to admit of the phenomena being from time to time observed. It was established that the hardness of the carotid extended more and more above and below the original clot. On killing the horse, at the end of this time, the interior of the carotid artery was found, on examination, to present three distinct coagula, which obliterated the vessel for the extent of ten inches. The centre clot corresponded to the injection; it was deeper coloured, wavy, and granular, and was nearly an inch and a half in length. To recapitulate: after the injection of the perchloride of iron, four minutes and a half were sufficient to produce in the carotid arteries of both sheep and horses the formation of a coagulum sufficiently firm and adherent to resist displacement by the impulse of the blood coming from the heart.

Such is the important fact, observes M. Rayer in conclusion, which Dr. Pravaz has demonstrated in presence of M. Lallemand and M. Lecoq. Dr. Pravaz is still engaged in prosecuting his researches; but has published these, his first results, in order to attract the attention of those inclined to investigate the subject, and of practitioners, to this method of accomplishing the obliteration of arteries. His observations have hitherto been purely experimental, and conducted so as to ascertain directly the mode of action of the coagulating agent which he employs. To apply it to the cure of aneurisms in the human subject the proceeding should be modified as follows: the perchloride of iron must be introduced into the aneurismal sac, the circulation having been previously arrested by compressing the artery beyond the aneurism, that is to say, between the tumour and the capillaries. The quantity of styptic liquor em-

ployed should be in proportion to the volume of the aneurismal tumour, and the duration of the compression should be from four to five minutes. These conditions are sufficient, according to M. Pravaz, to produce a compact voluminous clot, capable of obstructing the artery like a cork, and of producing the same effect as a ligature.—*Revue Médicale Française et Etrangère*, January 31, 1853, p. 83.

On the Anti-Hemorrhagic Effect of Chloroform during Operations. By M. Chassaignac, Surgeon to the Hôpital Saint Antoine.

Surgeons who have performed a great number of operations with the aid of chloroform must have observed the small amount of blood lost during severe operations by some subjects under the influence of this anæsthetic: for my part I have long remarked it. Without attaching importance in other respects to this peculiarity, I could not avoid comparing the trifling nature of these losses with the large quantity of blood generally poured out in capital operations in which chloroform is not employed.

Reflecting on the mode in which such a result might be produced, it soon occurred to me that an individual in whom the physical and moral agitation caused by an operation raises the pulse to 120, must lose more blood from an opened artery than one in whom the pulse does not exceed 60 beats in the minute, and I thought that we might find in this fact something extremely advantageous, and having a direct practical application in reference to hemorrhages occurring during operations. Still, this was so far but a surmise, resting partly, it is true, on impressions sufficiently vague, but also supported by this physiologically incontestible reasoning, viz. that a wounded person whose pulse beats 120 in the minute must lose, in a given time, all other things being equal, more blood than one in whom it does not exceed 60.

But to draw conclusions, and, above all, conclusions capable of practical application, something more is necessary than surmises and reasoning, however plausible they may be. I therefore resolved to submit to special observation in this respect a certain number of patients operated on in the Hospital Saint Antoine, and I am now desirous of drawing the attention of surgeons to the results thus obtained.

The observation of eleven cases, viz, three of amputation of the thigh, one of amputation of the leg, four of removal of the breast, one of total resection of the first metatarsal and first cuneiform bones, one of resection of the humerus, and one of resection of the inferior maxillary bone,—has furnished me with the opportunity of establishing, that, whether during the period of collapse, or that of anæsthetic tolerance, the losses of blood which usually attend such cases were vastly lessened; and that, especially in two subjects, one a female, from whom the breast was removed, and the other a man on whom amputation of the thigh was performed, it might almost

have been said that the operations took place without hemorrhage. In the latter case, it is true, the compression of the femoral artery was maintained with great precision; still, it was evident that the chloroform contributed to the arrest of the blood, for when I desired that the compression should be suspended, the entire of the wounded surface, with the exception of the principal artery, which furnished a very moderate jet, gave so trifling a flow of blood that we were obliged to wait for the cessation of the anæsthetic state, to be able to apply ligatures to the secondary arteries. In the female, whose right breast was removed on account of a gland-like tumour, a teaspoonful, literally, of blood was not lost during the operation. In this case I committed the mistake of not awaiting the restoration of consciousness before dressing the wound; and—a point well worth attending to—hemorrhage supervened, which was not discovered until some time after the application of the dressing, some hours, in fact, after the patient had been replaced in bed.

It is not only with respect to arterial hemorrhage that chloroform may be considered as diminishing the loss of blood; it has a similar effect on venous hemorrhage. It is known, in fact, that the badly restrained efforts of a suffering patient predispose him in a peculiar manner to the latter variety of loss of blood; for he is under the influence of two causes which play an important part in this kind of hemorrhage: first, imperfect respiration, and next, energetic muscular contractions. These two causes are removed by chloroform, and are replaced, throughthe effects of this agent, by a state of collapse or anæsthetic tolerance.

In order to give a rational account of the forces in virtue of which the phenomenon we are considering takes place, it will suffice to compare briefly the condition of a patient operated on in the ordinary state, with that of an individual who has reached the period of tolerance.

In the former, the dread of the operation about to take place accelerates the number of the pulsations, increases the impulse of the heart, and retards the free return of the venous blood, not only in csonequence of the disturbance of the respiration, but also of the efforts made by the patient, while restrained by the assistants. Thus, increase of the number of the pulsations, augmentation of their intensity, and arrest of the venous blood, are the circulatory conditions of the patient submitted to operation without the employment of anæsthetics. What do we observe when the latter have been administered? Precisely the contrary: diminution of the frequency of the throbbing of the pulse, weakening of its intensity, and a normal state of the respiration and of the venous circulation. Comparing such opposite conditions, it is not difficult to understand the difference of the result observed in reference to the hemorrhagic tendency.

Let us now consider what practical conclusions may be drawn from what has just been laid down. Under this head, and as the result of my observations, I may observe:—1. That the sedative

action of the chloroform, during what has been styled the period of tolerance, diminishes in those who are operated on: *a.* the number of the pulsations; *b.* the strength of the impulse of the heart; *c.* the arrest of the blood, which is a cause of venous hemorrhages. 2. That the diminution of hemorrhage, during the period of tolerance, may be a real advantage in the case of operations involving the possible opening of a great number of vessels. 3. That if it is sometimes useful, as has been recommended by some surgeons, not to apply the dressing until a certain time has elapsed after an operation, this procedure may be said to be obligatory after the employment of chloroform, the chances of an ulterior hemorrhage being greater in proportion as less blood has been lost during the operation.—*Le Moniteur des Hôpitaux*, 3rd March, 1853, p. 210.

[The fact of the action of anæsthetic agents in lessening the hemorrhage during operations has been noticed incidentally by several English writers, but as this very important result of their use has not, so far as we are aware, been so carefully described and commented on by any surgeon as in the foregoing communication of M. Chassaignac, we have thought a translation of his remarks would not prove uninteresting to our readers.—Ed.]

Remarks on Pellagra. By Dr. José Martinez, Physician at Grávalos.

I wish to call attention to a very severe disease, a scourge of the human race, which has for centuries been as common as it has been misunderstood in Rioja and the neighbouring provinces, and probably through the entire of Spain, or perhaps in all the west: I allude to Pellagra. This disease, apparently the legitimate offspring of the primitive and contagious leprosy, attacks one-tenth part of the population of the villages, and is little less generally prevalent in the rest of the country. There is no exaggeration in this assertion; it is a fact which I have demonstrated to several of my professional brethren, and which I can easily prove to others. The town of Grávalos, where I reside, is almost all as much or more infected than the four municipalities of Oviedo; and few are the towns in the province of Logroño in which I should not be able to point out cases in greater or less number. And at all events I can state, with the utmost confidence, that among the mendicant classes pellagra exists recognisable at a glance in an eighth or at least in a tenth part of their number. The peculiar advantages which a residence in this locality affords, in consequence of the number of visitors who resort to its mineral waters; my frequent visits and consultations within a certain radius of my native district, where I have practised for more than thirty years; and my incessant study of the subject, have acquired for me the important power of recognising the occult cause of the majority of chronic diseases. If pellagra, which is assuredly nothing more than a variety of leprosy, is implanted in the generations of this country, as historical data render probable, it is also

disseminated through almost all the races of the globe. There is no doubt that this and some other destructive principles have been transmitted from generation to generation. There does not exist a single case of accidental leprosy or pellagra. Pellagra is evidently hereditary, and it is as evidently non-contagious. Pigs as well as man are subject to a species of leprosy, and in them, too, it is seen to be hereditary, since in the same herd the disease will appear exclusively in those of leprous descent. Such is the true remote cause of pellagra; and the sun and wretchedness (which have, perhaps, been the proximate means of its original development) are merely secondary causes, although they have been very generally received as its true sources; and it is in this point of view it may be said that pellagra is the inheritance of misery, and that, like a noxious reptile, it creeps forth under the vivifying influence of the vernal sun. The proximate cause, as is the case with other diseases, is unknown; none of the opinions heretofore advanced are satisfactory, and we are left in doubt between the alterations of the sanguineous fluid of Casal (which appears the most rational), those of the nervous system, and those of the liver. Compelled to give an opinion, I should be inclined to attribute the disease to an alteration *totius substantiæ*, believing that all the tissues, or, in other words, the entire body, has been constructed of depraved materials, and that the blood, as the element of organization (*anima carnis*), in the first instance suffers from the effect of the congenital dyscrasia. It is a dyscrasia, in fine, the essential nature of which, although specific, or *sui generis*, is unknown,—a pathological individuality. Scurvy, rickets, and many other diseases which are supposed to proceed from a scrofulous taint, are the effect of the pellagric virus. The latter shows itself from birth and early infancy, and carries off numbers of children, particularly if the mother be the parent from whom the taint is derived. About the age of puberty many are chlorotic from this cause; nevertheless it is during adolescence that the cachexy is least troublesome. In adult age, after insolation, or after febrile symptoms of an intermittent type, preceded or not by slight or severe gastric or nervous derangements, the shadow of the coming many-headed hydra appears on the back of the hand,—in Rioja as an affection of the skin, so slight that at times it is easy for even experienced persons to fail in recognising it. This affection of the skin, which, as Casal says, cannot be confounded with any other, because there is none other "of its form and colour, nor of its name, nor of its kind, nor having its peculiar conditions," and which is the pathognomonic sign of pellagra, I have observed in some children, recently born of pellagric parents, to present a beautiful rose-colour and circular radiated figure; in adults it is distinguished among other things (which it is not easy to describe, however perfect an idea one may have of them), by an erythema in the metacarpal regions, and sometimes in the metatarsal and other parts, of a dark shining or glistening appearance, inclining at times to an erysipelatous form, presenting horrible rugged crusts, which subsequently separate in dense scales,

leaving the subjacent skin red, smooth, and shining, and sometimes with depressions. However, I do not intend now to give a detailed account of the disease; my sole object in bringing forward this very slight notice is to show, pending the publication of a monograph I am preparing on the subject, that this apparently trivial rugous and shining erythema of the metacarpal regions, this "*quasi lucens quippiam*," according to Leviticus, ought to arrest the attention, and that, if it be attended with any antecedent or simultaneous gastric or nervous derangement, pellagra will always, or almost always, be found to exist. In conclusion, I would say that the pellagra (which ought to be called the disease of misery) accompanies in disguise a multitude of dyscratic and dynamic affections, without external manifestation of its presence; that the herpetic eruptions have much connexion with it, and I even possess records of cases which would justify the suspicion that the two affections are branches of the same tree; that there are no remedies capable of effecting the radical cure of pellagra, it being false that such has ever, even in a single instance, been effected,—that the only palliatives are cooling and sweetening measures, as vegetable juices, emollient baths, sometimes, in the nervous form, warm saline and other mineral waters; that prophylaxis, by forbidding the marriage of persons tainted with the disease, is the essential point, and as this is impossible, that infected mothers should at least be prohibited from nursing, and thus conveying a second dose of the poison to their offspring.—*Boletin de Medicina, Cirugia y Farmacia*, January 2, 1853, p. 4.

On Pellagra. By Dr. P. Mérier.

The following general remarks are appended to the reports of two cases of pellagra with suicidal lypomania, published by the author in the Gazette des Hôpitaux. Though Dr. Mérier's observations contain little that is new, we think it may be not unprofitable to reproduce them here in connexion with the translation of Dr. José Martinez' paper on the same disease.

What is the nature of pellagra? Is it a general or a merely local affection? It is evidently a general disease, having its essential seat in the internal organs and viscera. The local, external, cutaneous affection is, in my opinion, merely accessory, and would assuredly be of little consequence, and could not compromise the life of the patient, were it not always accompanied by a much more serious, internal, and general condition. I believe, then, that pellagra is essentially an internal general disease, the characteristic and *pathognomonic* symptom of which is, indeed, the cutaneous affection, but whose nature, seat, essential cause, and most important lesions, are to be found in the internal organs; so that I should be tempted to admit the possibility of the existence of pellagra, without the manifestation of its *pathognomonic* symptom, and without external lesion, and I feel persuaded that there are many instances of such latent pellagras. Let us admit, for example, that it were possible to withdraw

completely a pellagrous individual from the action of the sun (which would, no doubt, be very difficult, for persons affected with pellagra have an almost invincible tendency to expose themselves continually to it), and assuredly the external character will not be manifested, and still the severe internal general state which, in my view, essentially constitutes the disease, will not the less exist. The two cases I have reported furnish us, to a certain degree, with proof of this; thus whenever I succeeded in keeping my patient for some days secluded from the solar rays, I observed the intensity of the local symptoms to be remarkably lessened, and during the winter they altogether disappeared. Still it could not be said that the disease itself had terminated, since with the first return of heat it re-appeared in all its intensity, and attended with its train of local and general symptoms: it existed, but in a latent state. I therefore feel warranted in saying that pellagra is not a local external affection, but a disease whose nature and cause are internal, and whose essential seat is in the internal organs; and, still further, that there may be, and doubtless do exist, latent pellagras, especially in the countries in which the disease is endemic; that, consequently, the sun, or, to speak more correctly, insolation, plays indeed an important part in this affection; but that it is not the only agent, the essential cause, although its action appears to be necessary, and most frequently indispensable, to the external manifestation of the affection.

Having had so little opportunity of observing this disease, I can not hazard an opinion as to its causes; but would remark, that neither of my patients had made use of maize, and that, consequently, M. T. Roussel's opinion with respect to it is not entirely correct. As the eruption may be absent, or disappear if the patients are from any cause withdrawn from solar influence, the diagnosis should not be solely looked for in external phenomena, but chiefly in the general state, diarrhœa, univeral and gradual debility, indolence, apathy, extreme desire for remaining in bed, marasmus, &c. As to the progress of the affection, it is invariably slow, and characterized by remissions always occurring during the winter, at which season the local symptoms sometimes wholly disappear, and even the general state becomes improved. The only treatment I am aware of, suitable to these cases, is to keep the patients as much as possible out of the reach of the intense solar rays, to stimulate them, if possible, by labour and moderate exercise, and to give them a nutritious diet, calculated to counteract the extreme debility into which they gradually fall. The prognosis is always unfavourable, and the disease generally terminates, sooner or later, in death; this has been the result, I believe, of all the cases which have been observed in the hospitals of Paris, and in the central departments of France.—*Gazette des Hôpitaux*, February 17, 1853, p. 84.

On the Employment of the Albuminate of Iron and Soda as a Therapeutic Agent, in various Cases in which Ferruginous Preparations are indicated. By Angelico Fabbri, Pharmaceutical Chemist at Gubbio.

Simple contact, at the ordinary temperature of the atmosphere, of white of egg, with a salt of iron, and soda, is capable of instantly producing a soluble albuminate of iron and soda, or an albuminoferrate of the alkaline base. The chemical combination of this compound is such, that it is not altered by the yellow ferrocyanide of potassium, the most delicate test of the salts of iron, unless a few drops of acid, as, for example, the hydrochloric, be previously added to the soluble albuminate; thus proving that this decomposition cannot be effected by the agency of the alkalies, but only by some acids, since the potassium of the cyanide is not able to displace the oxide of iron, becoming oxidized at its expense, and setting the metal free, as occurs with the other ferruginous preparations. Considering that we find in the blood, albumen, soda in excess, and iron, and having shown how these three bodies, by simple direct contact, form a soluble salt, the chemical combination of which is so powerful that it is not destroyed by the most delicate re-agents,—may we not fairly infer that the iron exists in the blood as an albuminate of iron and soda? and would it not, therefore, be reasonable to administer iron in the various diseases in which it is prescribed, principally in reference to the state of the sanguineous system, in the form of albuminate, as that in which nature itself has placed it within our organism,—one of the products, so to speak, on which our life depends. When I read in works of chemistry that the yellow ferrocyanide of potassium is not capable of demonstrating the presence of iron in the blood, until a stream of chlorine has first been passed through the latter to destroy its colouring matter, I am confirmed in the opinion that the iron exists in that fluid as an albuminate of iron and soda, because this salt, requiring the addition of an acid to render it capable of detection by the cyanide, is supplied with it by the chlorine, which, in destroying the organic colouring matters, becomes converted into hydrochloric acid by uniting with their hydrogen. Physicians have long been puzzled, and are still at a loss, how to administer iron, a most valuable remedy, in the manner most suitable to the internal organism; hence the great number of preparations of this metal. Some object to its saline combination with mineral acids, on the ground that these are inorganic, and they prefer giving it in the metallic or oxidized state, leaving to the acids of the stomach to form with it compounds which may be carried into the circulation. Others, unwilling to run the risk of having the greater part of the iron—little or not at all acted on—expelled with the fæces, prescribe it in the saline state, but combined with organic vegetable acids; hence we have the malate, tannate, citrate, &c., of iron. Others, still more scrupulous, wish to have it united to acids of an animal nature, and prefer the lactate, the cyanide, &c.; and I, going still further

would recommend its employment in the state of albuminate of iron and soda, requesting physicians to take into consideration what I have advanced, and to ascertain if practice will in this instance corroborate theory.

In preparing the albuminate of iron and soda I employ the following process. Take 112 grains of caustic soda, and 104 of sulphate of iron. Having dissolved both in a sufficient quantity of distilled water, let the solutions be poured on the whites of four eggs previously beaten up; let all now be shaken together and poured upon a filter to separate the hydrated oxide of iron which has precipated, since all the iron is not in this case converted into albuminate. To the filtered liquid, which now contains, in addition to the albuminate, sulphate of soda formed by the decomposition of sulphate of iron by the soda present in excess, lime water is to be added, to decompose the sulphate of soda, by which an insoluble sulphate of lime is precipitated; to separate the latter the mixture is to be again filtered, and, as the filtered fluid will now contain an excess of lime, it is to be subjected to the action of a stream of carbonic acid, care being taken to avoid using an excess of the latter; and again filtered to get rid of the insoluble carbonate of lime thus formed. The filtered fluid is now to be allowed to evaporate in a wide shallow vessel, and with the aid of the heat of a stove, until it is reduced to a pint. A clear orange yellow, slightly saltish, chalybeate solution is thus obtained, which, as already mentioned, does not give a precipitate with ferrocyanide of potassium without the previous addition of an acid. Each ounce of this liquid contains approximatively four grains of the albuminate, *plus* an excess of albumen and soda, as may be seen by referring to the process employed; the solution, consequently, has a slightly alkaline re-action. It is desirable that the soda should thus be present in excess, in order that the compound should be conformable to the state in which it exists in the blood, where we find the albumen rendered alkaline by an excess of soda. This albuminate may be made into a syrup, and rendered grateful by the addition of aromatic waters. The composition of the albuminate of iron and soda is represented by the following formula:—$C^{30}\,H^{50}\,O^{10} + HO + Fe^2\,O^3 + Na\,O + HO = \bar{A}l\,Fe^2\,O^3 + Na\,O + 2\,HO$ water. As the albumen loses a portion of its nitrogen in order to be converted into albuminic acid, we must suppose that a portion of the soda by its presence determines the formation of a fatty matter at the expense of other principles of the same albumen, and then becomes saponified. I have given the formula of the albuminate of iron and soda alone, neglecting the excess of soda and of albumen, which, although united to the liquid, perhaps, with some other soluble salts of the albumen of the egg (chlorides), I do not consider to form part of the saline compound, which may be obtained in radiated crystals by evaporating the solution to dryness.—*Bulletino delle Scienze Mediche di Bologna*, November and December, 1852, p. 385.

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